A PHONOLOGICAL RECONSTRUCTION OF PROTO CHIN

The members of the Committee approve the masters thesis of Khoi Lam Thang

Dr. Fraser Bennett _____
Supervising Professor

Ajarn Noel Mann _____

Ajarn Ken Manson _____

Assoc. Prof. Dr. Somsonge Burusphat _____

Asst. Prof. Dr. Saranya Savetamalya _____

Approval Date: _____

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Khoi Lam Thang

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RESUME

Name: Khoi Lam Thang

Date of Birth: April 27, 1962

Place of Birth: Pin Oo Lwin (May Myo), Mandalay Division, Myanmar

Institutions attended:

Zomi Theological College, Falam, Chin State, Myanmar (1984: Diploma in Theology)

No. 1. Basic Education High School, Tedim, Chin State, Myanmar (1985: Matriculation)

Clark Theological College, Mokokchung, Nagaland, India (1987: Bachelor in Theology)

Myanmar Institute of Theology, Insein, Myanmar (1993: Bachelor in Divinity)

University of Distance Education, Mandalay Art and Science University, Myanmar (1999: Bachelor of Art -Philosophy)

Employment:

Pastor, Leipi Baptist Church, Kalaymyo, Myanmar (1987 to present)

Lecturer, Zomi Theological College, Falam, Chin State, Myanmar (1994-1995)

Executive Secretary, Zomi Christian Literature Society, Kalaymyo (1996-1999)

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ABSTRACT

A PHONOLOGICAL RECONSTRUCTION OF PROTO CHIN

Khoi Lam Thang

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Supervising Professor: Dr. Fraser Bennett

This thesis presents a phonological reconstruction of Proto Chin. Previous phonological reconstructions of Chin focused on tone and initial consonants (Ono 1965, Solnit 1979, Luce 1985, Ostapirat 1998, and Bhaskararao 1998). Chin languages are generally classified under the Kuki-Chin-Naga branch of Tibeto-Burman (Shafer 1966, Benedict 1972, and Bradley 1997) and traditionally subgrouped as Southern Chin, Central Chin, Northern Chin, Old Kuki and the Other Chin Groups (Grierson 1904, Bradley 1997). So-Hartmann (1988) has proposed a lower level subgrouping of Southern Chin languages. However, a full phonological reconstruction, classification and subgrouping of Chin languages is yet to be completed.

This thesis applied the lexicostatistic method to 21 Chin languages spoken in Myanmar, resulting in a preliminary subgrouping and selection of six representative languages for reconstruction purposes. The comparative method is applied to these representative languages for reconstruction of Proto Chin, based on a 443-word vocabulary. This reconstruction provides a solution for the longstanding reconstruction problem of *g, and sheds additional light on the subgrouping of Chin languages

บทคัดย่อ

การสืบสร้างทางระบบเสียงของภาษาโบราณตระกูลฉิ่น

โดย

คอย ลำ ทัง

มหาวิทยาลัยพายัพ เชียงใหม่ 2544

อาจารย์ผู้ควบคุมวิทยามิพันธ์ : ดร Fraser Bennett

วิทยานิพนธ์ฉบับนี้นำเสนอการสืบสร้างทางระบบเสียงของภาษาโบราณตระกูลฉิ่น การสืบสร้างภาษาโบราณตระกูลฉิ่นที่แล้วมานั้น ให้ความสำคัญเน้นเฉพาะการศึกษาด้านวรรณยุกต์ และพยัญชนะต้นเท่านั้น (Ono 1965, Solnit 1979, Luce 1985, Ostapirat 1998, และ Bhaskararao 1998) ภาษาตระกูลฉิ่นจัดอยู่ในกลุ่มภาษาตระกูล ทิเบต-พม่า (Shafer 1966, Benedict 1972, และ Bradley 1997) ซึ่งในสมัยก่อนภาษาตระกูลฉิ่นนี้มีการจัดเป็นกลุ่มย่อยออกเป็นฉิ่นใต้ ฉิ่นกลาง ฉิ่นเหมือ กูกี่เก่า และภาษาฉิ่นสาขาอื่นๆ (Grierson 1904, Bradley 1997). So-Hartmann (1988) ได้เสนอการจัดแบ่งกลุ่มของภาษาตระกุลฉิ่นสาขาฉิ่นได้ แต่อย่างไรก็ตามการสืบสร้างทางระบบเสียงของภาษาตระกูลฉิ่นยังไม่สมบูรณ์นัก

วิทยานิพนธ์ฉบับนี้ได้ใช้วิธีการเปรียบเทียบสถิติของคำศัพท์ดั้งเดิม จัดแบ่งกลุ่มภาษาตระกูลฉิ่นจำนวน 21 ภาษา ซึ่งเป็นภาษาใช้พูดในประเทศพม่า การจัดแบ่งกลุ่มภาษาในขั้นพื้นฐานได้คัดเลือกตัวแทนภาษาลำหรับการสืบสร้างภาษาโบราณจำนวน 6 ภาษา จากนั้นใช้วิธีการเปรียบเทียบภาษาเพื่อการสืบสร้างภาษาโบราณตระกูลฉิ่น ทั้ง 6 ภาษาโดยศึกษาคำศัพท์ 443 คำ จากการสืบสร้างภาษาโบราณได้ช่วยแก้ปัญหาการสืบสร้าง เสียง *g และของภาษาโบราณตระกูลฉิ่น ให้ความกระจ่าง ในการจัดแบ่ง ภาษาย่อยของภาษาตระกูลฉิ่นอีกด้วย

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LIST OF ABBREVIATIONS AND SYMBOLS

$	Syllable boundary
1p	First person plural
1s	First person singular
2p	Second person plural
2s	Second person singular
bro.	Brother
C	Consonant
F	Falling
f	female
G	Glide
H	High
ICSTLL	International Conference on Sino-Tibetan Languages and Linguistic.
IMS	Indian Military Service
Intl.	International
L	Low
LTBA	Linguistics of the Tibeto-Burman Area
m	male
M	Mid
N	Nasal consonant
NE	Northeast
No.	Number
NW	Northwest
p. c.	Personal communication
R	Rising
r.	Ratio
Ref.	Reference

Rev.	Reverend
S	Stop
SIL	SIL International
Sq.	Square
T	Tone
TP	Tone Pattern
V	Vowel
yr	younger

CHAPTER 1

INTRODUCTION

1.0 Introduction

The Chin languages have rarely been studied by linguists. As a result the classification and subgrouping of these languages is incomplete. This thesis aims to provide a reconstruction of Proto Chin and to propose a subgrouping of the languages based on this reconstruction.

This chapter presents a brief overview of the Chin people, Chin linguistic classification, literature review, sources of linguistic data, methodology, and the purpose of this thesis.

In chapter 2, the selection of representative Chin languages is discussed. Chapter 3 provides brief descriptions of the selected languages. The reconstruction is given in chapter 4. A description of Proto Chin, the phonological relationships among Chin languages and a proposed stammbaum of the Chin language family are provided in chapter 5. Chapter 6 is the conclusion.

1.1 Background

This section provides brief background information about Chin people in general and particularly in the Chin State of Myanmar[1]. The discussion entails the historical background of Chin people, geographical and demographic information, cultural background, communication, nomenclature and different languages.These various

[1] Myanmar was formerly called Burma. The State Law and Order Restoration Council changed the country name to Myanmar in 1989.

Figure 1. Map of Myanmar

1.1.1 Historical background

Chin people have different autonyms as well as exonyms (see section 1.1.6), and live in Bangladesh, India and Myanmar. Their origin was the Yellow or Manchu River valley of Southwest China from where they migrated considerable distances over many centuries (Lehman 1963:11).

Different scholars give different dates for their entry into Myanmar. Lehman (1963) claims this entry date to be 750 AD, Khen Za Sian (1999) proposes 800 AD and Tuan Khaw Kham (1999) claims 850 AD. The earliest historical mention of Chin people in Myanmar comes from inscriptions of the Pagan kingdom from the thirteenth century AD (Lehman 1963:20).

Later, Chin people moved toward the west of mainland Myanmar. Vum Kho Hau (1963) dates this migration as 1374 AD, which is the time when the Kalay (or Kale) Sawbwa (chief) built the palace and Chin people were put to forced labor. The other proposed dates for the settlement of Chin people to the current region are 1347 AD (Kip Thian Pau 1999), 1400 AD (Khen Za Sian 1999) and 1490-1510 AD (Bawi Hu 1998).

The British invaded and annexed the Chin Hills in 1892 and declared the area an integral part of Burma. The British introduced the Chin Hills Regulation in 1896, making the Chin Hills a single administrative areas. This regulation was replaced by the Chin Special Division Act of 1948, which was adopted on October 22, 1948, after Myanmar gained independence. Within the Chin special division were six subdivisions, north to south: Tedim, Falam, Hakha, Mindat, Paletwa and Kanpetlet.

The Chin Special Division was changed to the Chin State under Section 30 (B) of the Constitution of the Union of Burma adopted on January 3, 1974. The former six subdivisions were formed into nine townships, namely, Tedim, Falam, Hakha, Mindat, Paletwa, Kanpetlet, Thantlang, Tonzang, and Matupi.

The scope of this thesis is confined to the Chin languages spoken in Myanmar, particularly in the Chin State.

1.1.2 Geography and demography

The Chin State lies in the west of Myanmar, between 24 and 21.45 degrees north latitude and between 92 and 94.5 degrees east longitude as shown in Figure 2. The area of Chin State is 13,367 square miles.

The Chin hills are a series of generally north-south oriented mountain ranges, but south of 22 degrees north latitude there is a large region in which this pattern is interrupted by cross-cutting local ridges, valleys, and other irregularities (Lehman 1963). The main mountain ranges vary in height from 5,000 to 9,000 feet. The highest mountain point, Victoria (Khonu), is 10,018 feet above sea level, situated in Mindat Township of Southern Chin State. The main rivers in the Chin State are Manipur, Bawinu, Kaladan and Tio rivers. The climate is chiefly influenced by monsoon winds, but owing to the altitude, the weather is often cold. The seasons are hot, wet, and cold.

Up-to-date official demographic information for the Chin State is not available. Referring to the 1931 census of India, Luce (1985) gives the total population of Chin speakers in Burma as nearly 344,000 with 44 different tribes. Today the population in Chin State is about 435,000. The writer of this thesis estimates that native speakers of Chin languages comprise over 95% of this population.

Map of Chin State

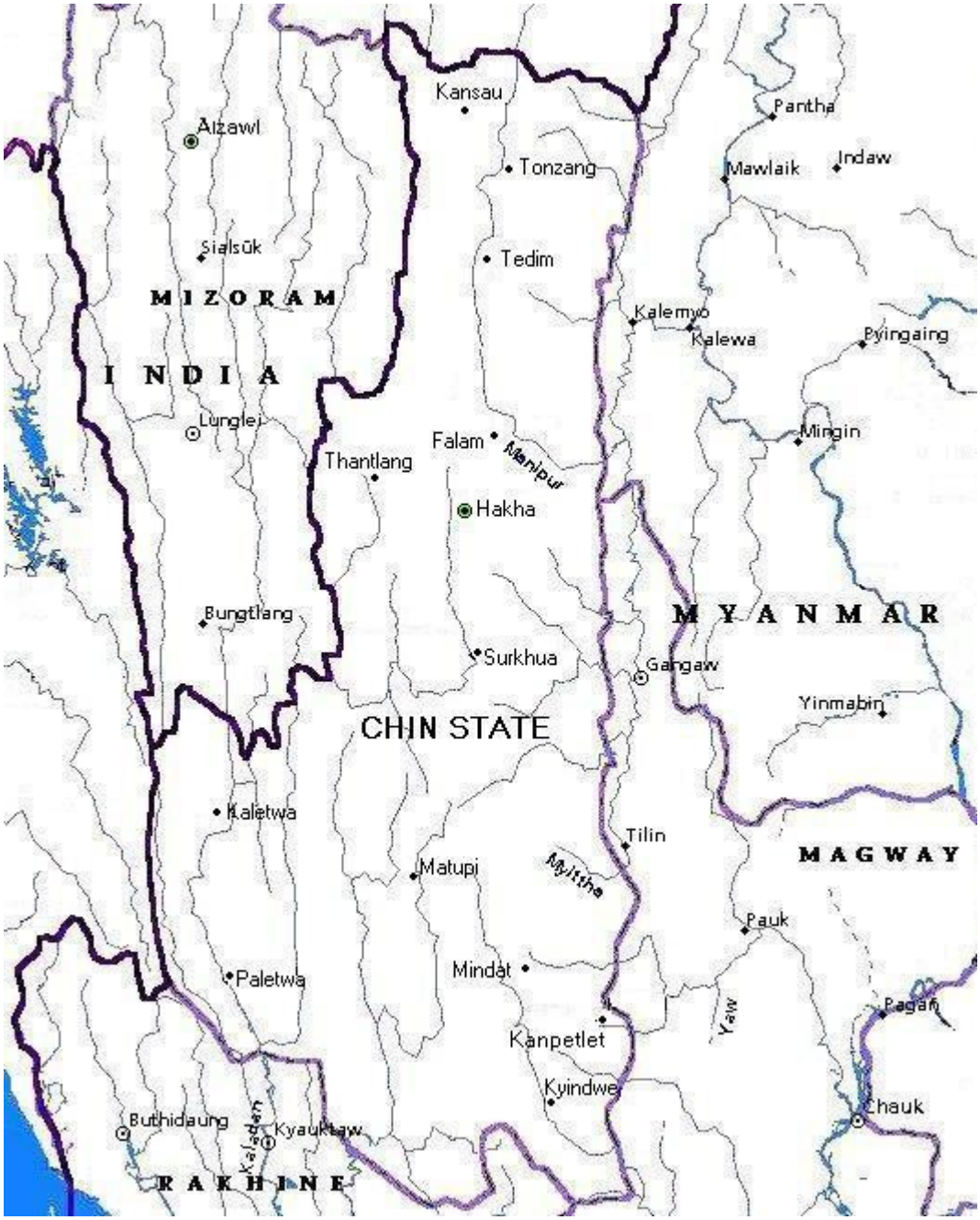

Figure 2. Map of Chin State

Map adapted from Rand McNally (1998)

1.1.3 Culture

The emblem of the Chin people is the hornbill associated in Chin legend with faithfulness, fidelity and loyalty. Before they embraced Christianity, Chin people were headhunters and animists. The society is patriarchal and monogamous. In the past, the hair knot position differed from north to south. Grierson (1904:552) says,

> … the Siyins, Soktes, Thados, Yos and Whenos wear the hair in a knot on the nape of the neck; the Tashons, Yahaos, Hakas, and the southerners generally tie it up on the top of the head, whence the name Baungshe, because it is usually just over the forehead.

The Masho, who are today known as Khami (Vumson 1988:43) wore their hair knotted at the side of the head.

Little agricultural advancement has taken place in Chin State so that swidden cultivation is still practiced in some places. Ancient religious beliefs and culture are interwoven such that it is difficult to differentiate the culture from beliefs. In the past, Chin people did not have friendly inter-tribal relationships but fought each other. The practice of revenge is still present among some Southern Chin groups.

Christianity was introduced to the Chin Hills by American Baptist Missionaries in 1899. Christianity changed some customs, such as spirit worship, head hunting and discrimination against women. Today the majority of Chin people are Christians.

1.1.4 Communication

There is no means of air or sea travel within Chin State. No national highway crosses the Chin State. Due to the geographical terrain, the rivers cannot be used for transportation. There is a road, which connects Mindat in the southern part of Chin State[2] with the central part of Myanmar. Communication in the north is better than

[2] The official usage of North and South Chin State coincides with Lehman's grouping which is based on social and cultural phenomena.

that in the south. There is no regular inter-state bus service in the Chin State, however there is daily bus service to Hakha (the state capital), Thantlang, Falam, Tedim and Tonzang from Kalaymyo in the Sagaing division. The roads are generally paved in the north, and dirt in the south. People seldom travel north-south or vice versa, but often travel east-west or vice versa, even up to Mizoram and Manipur States of India.

1.1.5 Nomenclature

One of the main complexities among the Chin people is what they call themselves. Chin people are called Kuki[3] in India, and Chin[4] in Myanmar. Matisoff (1995) mentions that 'Chin' is a loose exonymic designation for many Northern Kukish languages and peoples. Chhangte (1993:1) says, "These tribes [Chins], then were what the Bengalis indiscriminately called 'Kukis', and the Burmese 'Chin'". There are at least four different autonyms used in the Chin State: 'Laimi', used in Falam, Hakha and Thantlang townships; 'Zomi', used in Tonzang and Tedim townships; 'Mizo', used in some parts of Tedim and Falam townships; and 'Cho', used in the south.

Grierson's definition of Chin as "the various tribes inhabiting the country to the east of Lushai hills, from Manipur in the north to about the eighteenth degree of the north latitude in the south" (1904:551) will be used in this thesis.

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[3] "Kuki is an Assamese term, applied to various hill tribes, such as the Lusheis, Rangkhols, Thados, etc. It (this name) seems to have been known at a comparatively early period. In the Rai Mala, Siva is stated to have fallen in love with a Kuki woman, and the Kuki are mentioned in connection with the Tipperah Raja Chachag, who flourished about 1512 AD" (Grierson 1904: 509).

[4] "Chin is a Burmese word used to denote the various hill tribes living in the country between Burma and the Province of Assam and Bengal. It is written and dialectically pronounced Khyang. The name is not used by the tribes themselves, who use titles such as Zo or Yo and Sho" (Grierson 1904: 510).

1.1.6 Chin languages in Chin State

There are different claims about the number of Chin languages spoken in Chin State of Myanmar. Focussing on Chin languages, Bradley (1997:26) says, "names for these [Kuki-Chin] groups are much more numerous than distinct languages". Referring to the 1931 census of India, Luce (1985:81) mentions that there are 44 different Chin tribes[5]. Grimes (1996) lists 38 Chin languages spoken in Myanmar. They are Asho, Bawm, Cho, Dai, Fannai, Falam, Gangte, Hakha (Baungshe), Hualngo, Khimi, Khualsim, Khumi, Khyo (Hyo), Laizo, Lente, Lushai, Kaang, Mara (Lakher), Matu, Mizo, Mindat, Mun, Ngawn, Ngente, Paite, Saizang, Senthang, Shongshe, Siyin, Taishon, Tedim, Teizang, Thado, Thawr, Zahau, Zo, Zokhua and Zotung.

In his article entitled "Call us Myanmar", Myatthu (2000) numbers 135 national peoples living in Myanmar, and 53 in the Chin State. They are Anan, Anu, Aupu, Asho Chin (plains), Awwakhami, Bamar, Chin, Dai (Yindu), Dim, Ganbe, Gwethe, Hsaihtan, Hsinhtan, Hwalngo, Kalintaw (Lushe), Kawno, Khami, Khuanghsai Chin, Khuangsu, Khunli or Hsim, Khwa-hsinme, Laing, Laizo, Laukhtu, Lemyo, Linte, Lushai (Lushe), Lyintu, Mahu, Makan, Marin, Miae, Miyam (Mara), Meithai (Kathe), Mwine, Naga, Pakim, Panan, Salaing, Tabaung, Taichun, Tandu, Tiddim (Tedam), Tardoe, Taw, Tezon, Yaunghtu, Zataung, Zohtone, Zeinnhyut (Zonniyut), Zope, Zo, and Zun. Among these 53 different languages, Meithai, Naga and Bamar are not in Chin language family.

To summarize the above sources and personal communication with local people[6]: there are 54 Chin languages spoken in respective Townships of the Chin State as

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[5] Tribes and languages are not always identical but generally languages differ according to tribes.

[6] Based on personal communication with Rev. Paul Tu Lung, a Rawngtu speaker on March 29, 2001; Rev. Kaw Kung, a Zotung speaker on March 30, 2001; Rev. Ngai Hung Om, a Cho speaker on April 1, 2001 and Robert Khua Hnin Thang, a Khualsim speaker on June 14, 2001.

shown in Table 1. The second row in the table represents the names of administrative townships.

Chin languages in Chin State of Myanmar								
Tonzang	**Tedim**	**Falam**	**Hakha**	**Thantlang**	**Matupi**	**Mindat**	**Kanpetlet**	**Paletwa**
Thado	Sizang	Falam	Hakha	Thantlang	Matupi	Mindat	Hnoktu	Khami
Tedim		Ngawn	Zokhua	Zophei	Zotung	Muun	Chinpon	
Zo		Laizo	Mie		Daai			
Teizang		Zaniat	Senthang	Lautu		Cho		Khasi
Hualngo (Mizo)			Thawr	Mara		Kaang		Khamui
Dim		Khualsim			Amlai	Rawngtu	Rah	Myo
Khuano		Zahau			Tamang			Laitu
Vangteh		Tapong			Wumtu			Khumi
Guite		Sim						Khuangsu
Val		Bualkhua						
Saizang		Taisun						
Phaileeng		Lente						

Table 1. Chin languages in the Chin State of Myanmar

1.2 Literature review

This section is divided as overview of Chin linguistic classification and reconstruction of Chin languages.

1.2.1 Overview of Chin linguistic classification

The internal relationship between lower level Tibeto-Burman groups is still unclear. Bradley (1997) classifies the Chin languages as part of the Kuki-Chin-Naga language group, which he places in the North-eastern India group. The North-eastern India group is classified as Tibeto-Burman, which is one of the two branches of Sino-Tibetan. Benedict's (1972) classification of Sino-Tibetan lists Tibeto-Burman under Tibeto-Karen. He reanalyzed the classification in 1976, and listed Karen under Tibeto-Burman. The later classification, which is "based on shared vocabulary in lexicostatistic lists" (Bradley 1979:15), is shown as Figure 3.

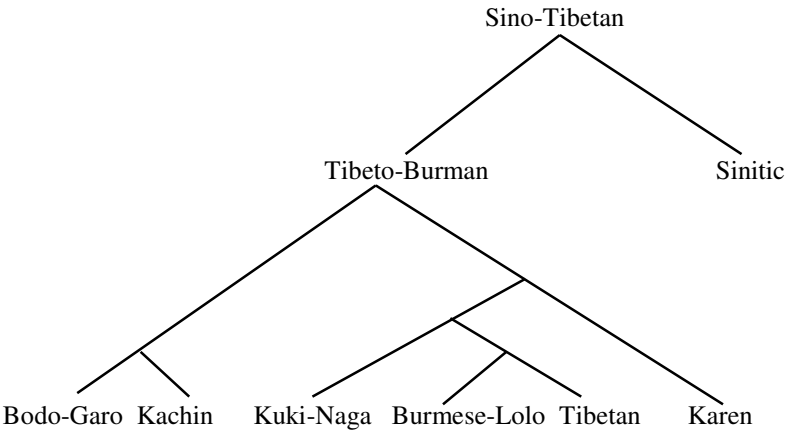


Figure 3. The Sino-Tibetan linguistic family (Benedict 1976)

Various linguists classify the Tibeto-Burman language family differently. Shafer (1974), splits Tibeto-Burman into four main parts: Bodic, Baric, Burmic and Karenic. On the other hand, Benedict (1972) identifies seven subgroups: Tibetan-Kanauri, Bahing-Vayu, Abor-Miri-Dafla, Kachin, Burmese-Lolo, Bodo-Garo, and Kuki-Chin. Bradley (1997) summarizes the overall pattern of Tibeto-Burman using Shafer and Benedict's classifications as shown in Figure 4.

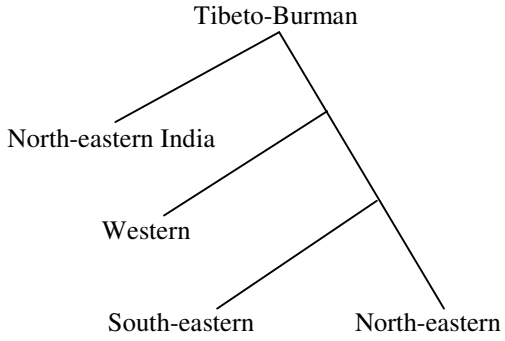


Figure 4. The Tibeto-Burman linguistic family (Bradley 1997:2)

Bradley (1997) further classifies Kuki-Chin-Naga under the Northeastern India group[7] (as shown in Figure 5) based on substantial lexical and morphosyntactic similarities. However he marks the relationship by a dotted line because Shafer classifies as a part of Burmic and Benedict links to Burmese-Lolo. Bradley subgroups the Kuki-Chin-Naga group as Southern Naga, Old Kuki, Meithei, Chin and Other Chin groups.

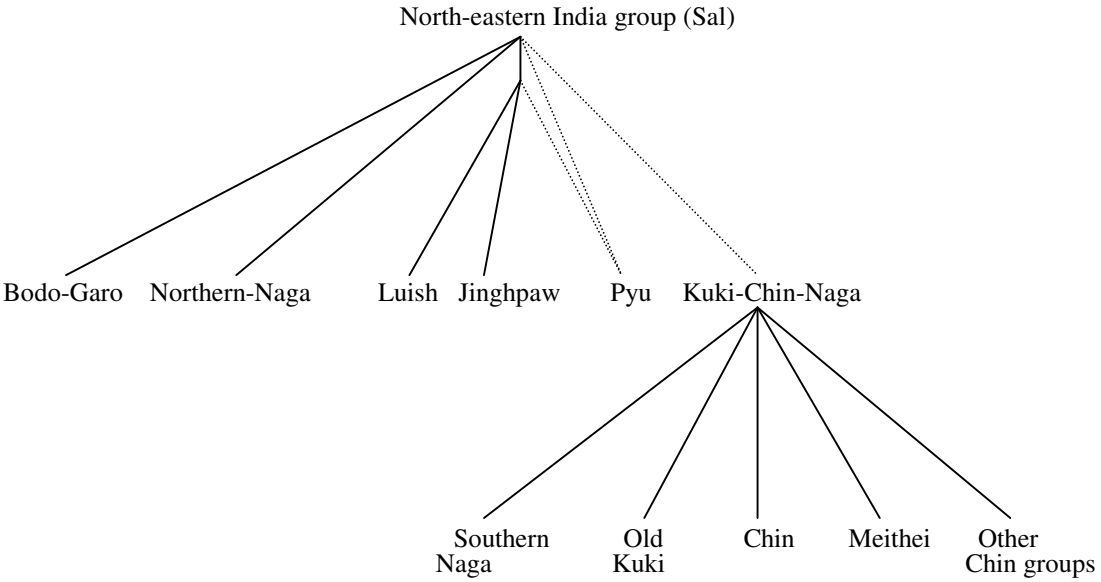


Figure 5. Kuki-Chin-Naga of North-eastern India group (Bradley 1997)

For Bradley (1997), Chin is further classified as Northern Chin, Central Chin and Southern Chin. The Chin language family mainly covers the languages spoken in Myanmar. Southern Chin language groups are divided into three geographical subgroups: Northern, Central and Southern.

[7] Burling (1983) terms this group as 'Sal' group.

Bradley (1997) classifies Kuki-Chin-Naga as shown in Figure 6.

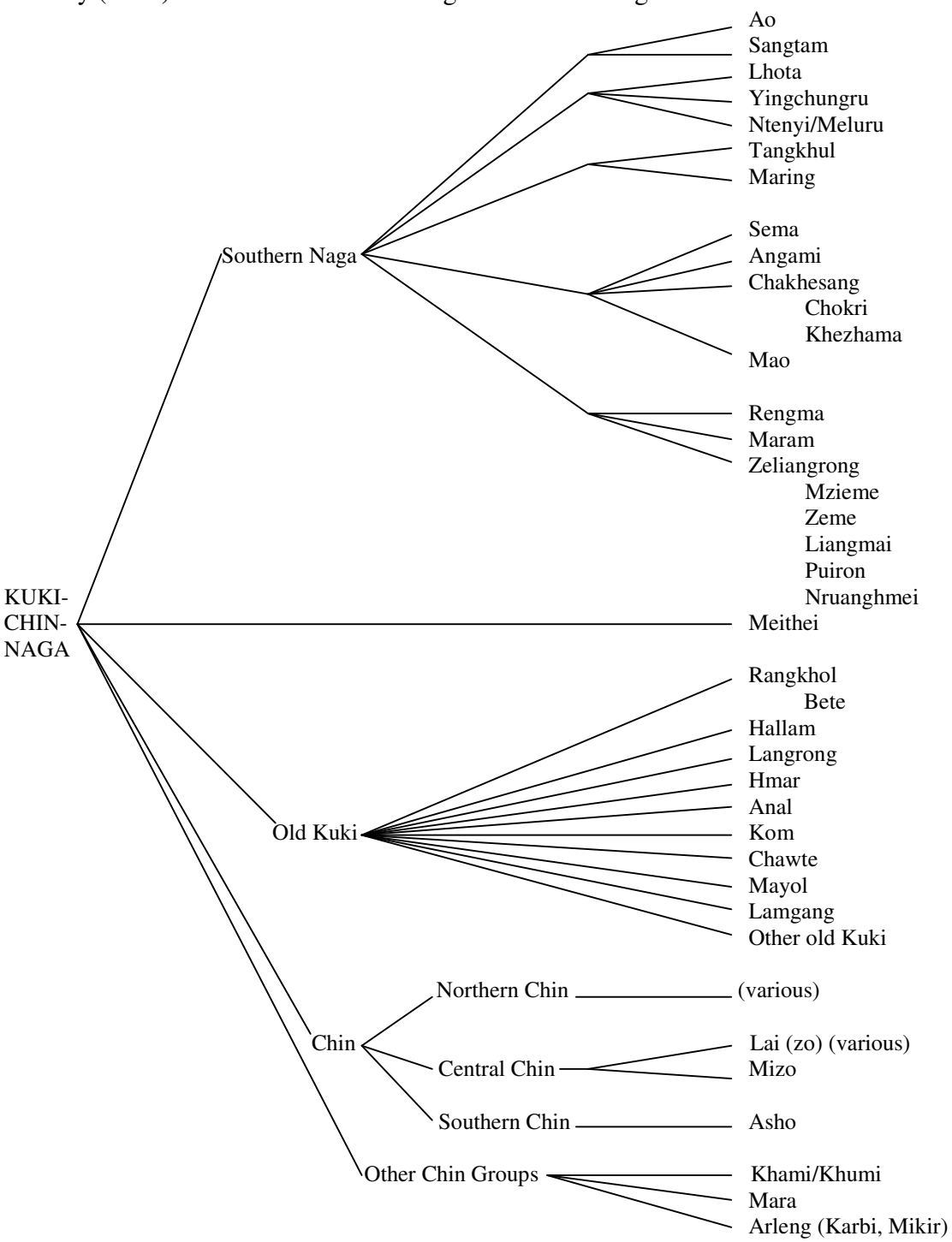


Figure 6. Kuki-Chin-Naga (Bradley 1997)

Bradley (1997:29-30) gives a more detailed picture of Chin languages at a lower level as shown in Figure 7.

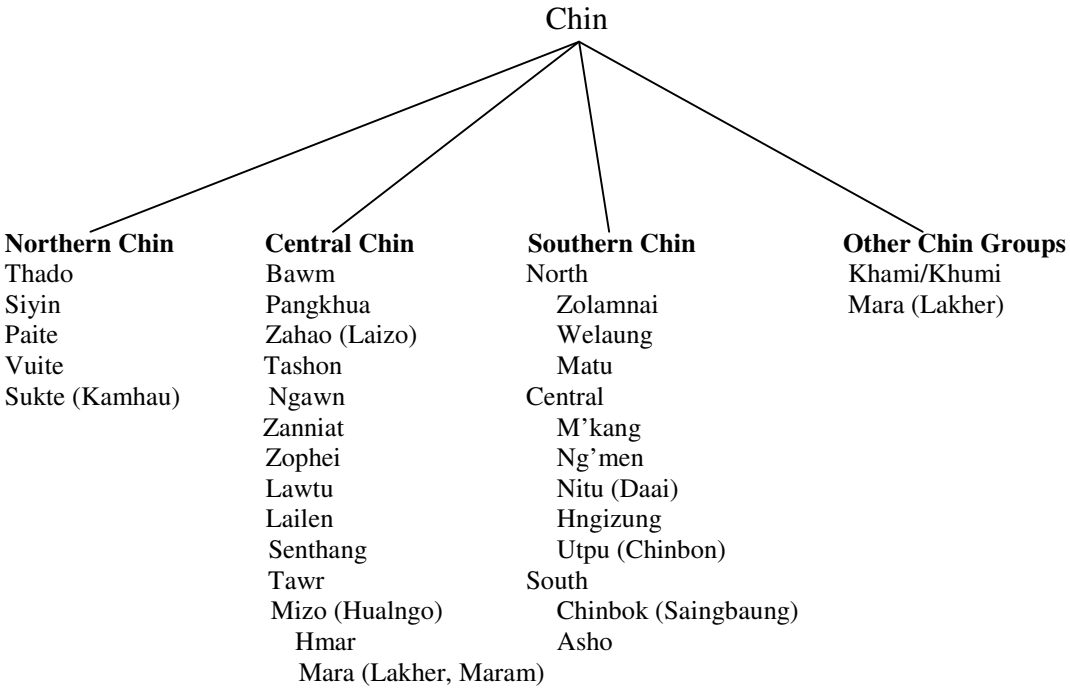


Figure 7. Chin subgroups (Bradley 1997)

Grierson (1904) in contrast, conducted classification and subgrouping of Kuki-Chin group as a part of his linguistic survey of India. He proposes four main groups: Northern Chin, Central Chin, Southern Chin and Old Kuki as shown in Figure 8.

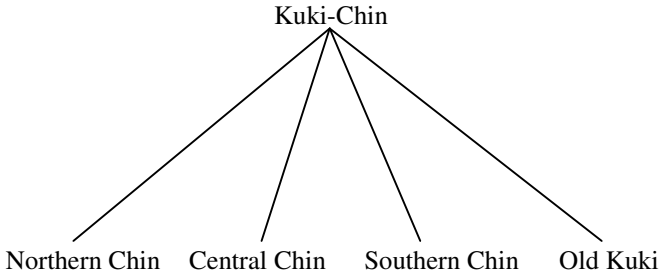


Figure 8. The Kuki-Chin language family (Grierson 1904)

The Old Kuki varieties are mainly spoken in India. Lushei (Ngente) is the archaic name of Mizo, and the speakers live both in Myanmar and India. Figure 9 illustrates Grierson's (1904) classification of Chin languages[8].

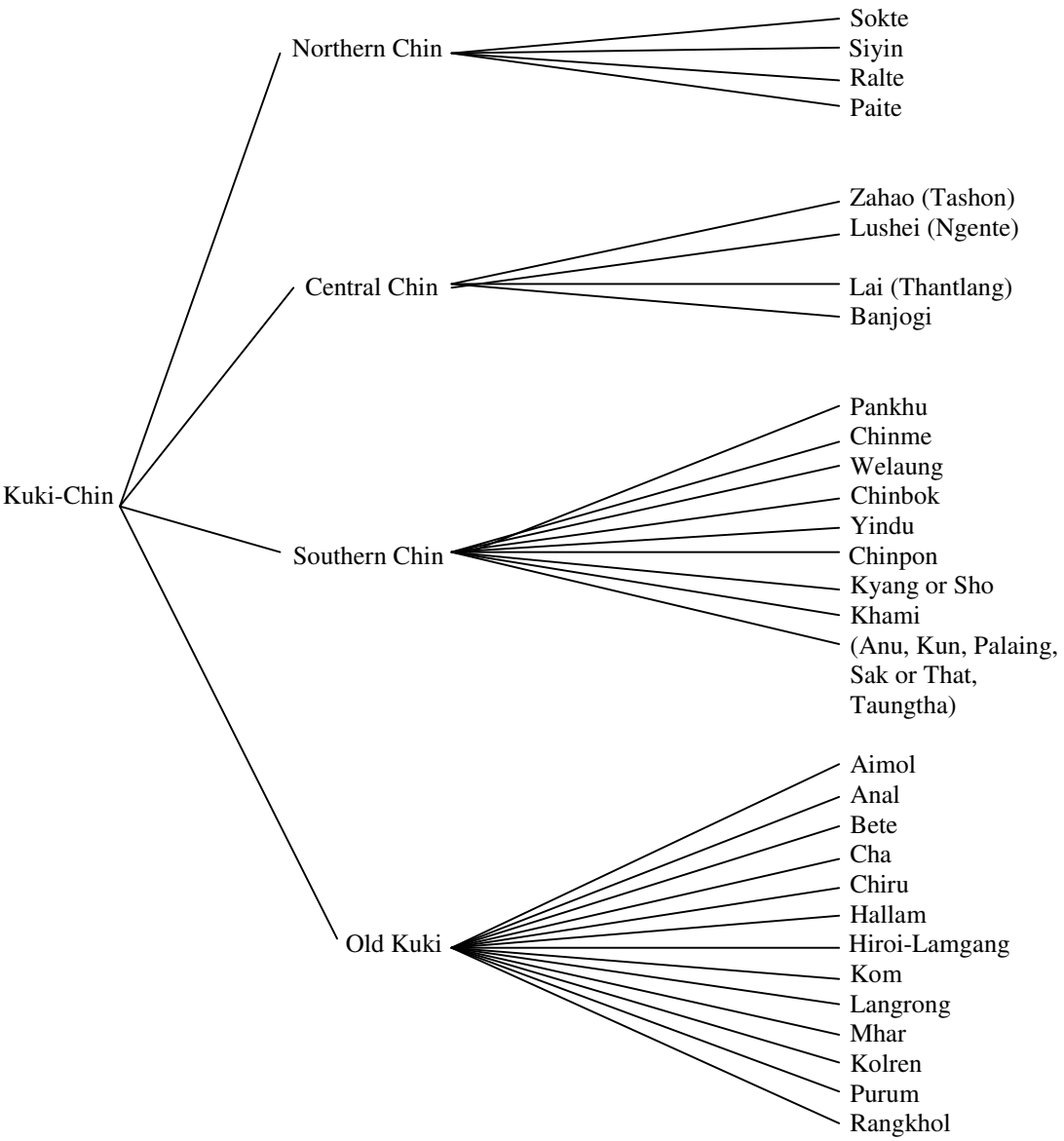


Figure 9. Grierson's classification of Chin languages

[8] Chin people (of India and Myanmar today) were under British rule when Grierson conducted his survey.

Peiros (1998:180) says that Kuki-Chin languages may fall into two subgroups: Luhupa (including Tankhur and other languages) and Chin, which includes at least four subbranches: Southern, Lakher, Old Kuki and Lushei as shown in Figure 10.

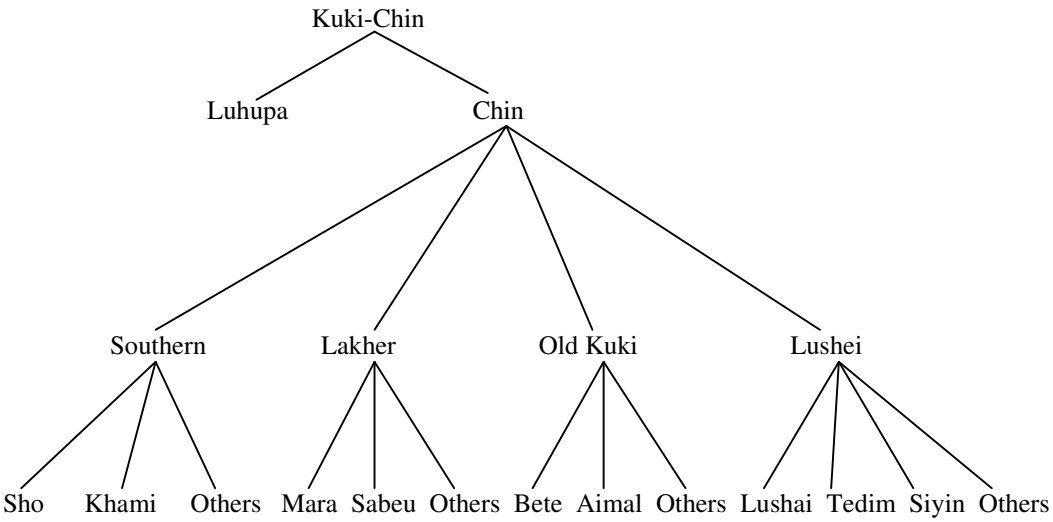


Figure 10. The Kuki-Chin language family (Peiros 1998)

Peterson (2000) proposes that there are two main Chin groups: Central (the traditional Central Chin, and probably also Old Kuki, but possibly not including Mara) and Peripheral (including traditional Southern and Northern Chin, and probably not including Khumi) as shown in Figure 11.

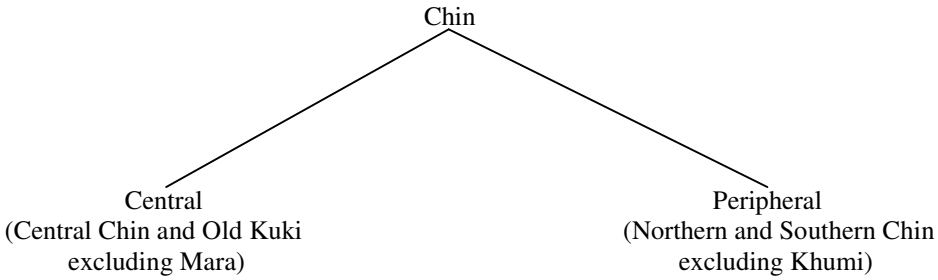


Figure 11. Chin language subgrouping (Peterson 2000)

The lower level classification of some Southern Chin languages has been attempted by So-Hartmann (1988) using a lexicostatistic analysis of the Swadesh 100 wordlist.

She subgroups the languages into two main groups, namely Khumi and Cho as shown in Figure 12.

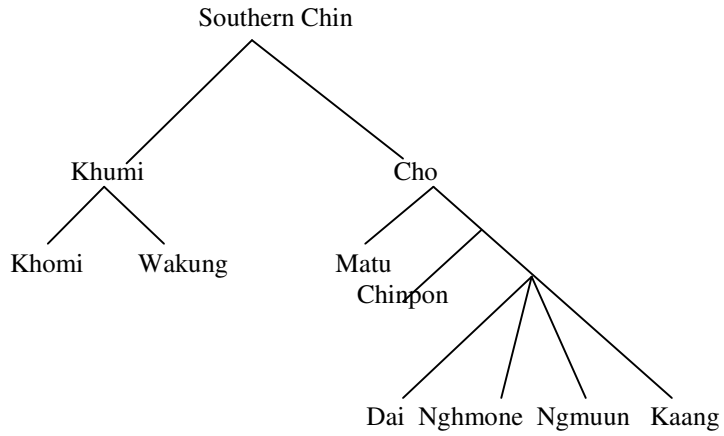


Figure 12. So-Hartmann's (1988) classification of Southern Chin

In summary, the majority of the previous research has the common conclusion that Chin languages are divided as Northern Chin, Central Chin and Southern Chin. To these three main groups, Grierson (1904) adds Old Kuki, and Bradley (1997) adds Old Kuki and Other Chin Groups. Peterson (2000) propose only two groups, in contrast to the traditional groupings based on phonological and morphological evidences.

1.2. Reconstruction of Chin languages

There have been few comparative reconstructions of Chin languages. Ono (1965) attempts to reconstruct the initial consonants using data from eight Chin languages: Tedim, Ngawn, Lai (Hakha), Laizo (Falam), Anal, Zotung, Khumi and Chinbok. Solnit (1979) attempts to establish phonological relationships between Tedim and Mizo, focusing on developments of a reconstructed *r. Luce (1985) contains 189 words in 22 Chin dialects, 683 words in 7 (or 8, including Lushai) dialects, and 192 words selected from a 683 word wordlist. He mentions the number of common words and proposes tone patterns. Bhaskararao (1996) also discusses the initial consonants

in Mizo (Lushai) and Tedim. (The literature review of initial consonant reconstruction is provided in more detail in section 4.2.1). Chhangte (1993) states that Mizo is the most phonologically conservative language in the Kuki-Chin group but does not cite any evidence for this claim.

Suprasegmental considerations of tone have also been written. Henderson (1965) postulates three contrastive tones in Tedim. Weidert (1987) uses Lushai (Mizo), Tedim and Mara among the Chin languages in describing Tibeto-Burman tonology. Zolai Zuunna (1982) discusses tone patterns in Tedim. Luce (1985) also offers some provisional descriptions of Chin tones, claiming that three tones was once the norm for Chin languages.

Chhangte (1985) analyses the acoustic characteristics of Mizo tone. Ostapirat (1998) discusses Tedim tones from a historical perspective. Nolan (2000) presents initial description of Cho (one of the languages spoken in Southern Chin State) tone as having three contrastive tones.

1.3 Purpose of thesis

The purpose of this research is to reconstruct Proto Chin. Previous phonological comparisons of Chin languages mainly focused on initial consonants, and a full phonological reconstruction is yet to be completed. This thesis focuses on all segmental aspects (but not tone) of Chin languages spoken in Myanmar. It is hoped that the result reported here will not only be a contribution to Tibeto-Burman historical linguistics, but will also be of practical use of Chin people in the development of Chin languages.

There are about 54 related Chin languages reported here. Many of them do not have literacy programs, and even the development of an orthography is still a critical issue for some languages. Based on shared phonological innovations a subgrouping of the

languages is proposed which, will be helpful in decision-making for language development programs among the Chin languages.

1.4 Methodology

Of the 54 reported Chin languages, wordlists for 21 were available to the present author. Previous scholarship (Grierson 1904, Bradley 1997) shows that Chin languages can be divided into three to five subgroups: Northern, Central, Southern, Old Kuki and Other Chin Groups. The 21 languages available to this study are well distributed according to geographical setting and traditional linguistic subgrouping. It is, however, difficult to apply the comparative method to 21 languages at a time.

Therefore, two main methodologies were applied in the research reported here. The first stage was a lexicostatistic comparison of the 21 languages, resulting in a preliminary subgrouping. Based on these subgroups, representative languages then were selected for comparative purposes.

In the second stage, the comparative method was applied to those representative languages resulting in a reconstructed proto-Chin and a subgrouping of the representative languages based on shared phonological innovation.

According to Arlotto (1972) the comparative method involves considering corresponding elements in two or more related languages and projecting them backward in time by positing an ancestor whose development can be shown to have resulted in the present form. Hock and Joseph (1986) mention the general phonological principle of symmetry system crosslinguistically. Historical linguists[9] of the late 19th century proposed that sound change is exceptionless. Although many exceptions were discovered to this proposal, sound changes in languages tend to be regular. This assumption of regular sound change provides a valid criterion to

[9] These historical linguists were called Neogrammarians.

establish language relationships. Phonological rules are posited to reconstruct earlier linguistic forms.

Therefore the comparative method is applied in order to trace the earlier phonological forms of Chin languages by comparing selected Chin languages. The guiding principles throughout the process of applying the comparative method were based on Crowley (1992) as follows:

1. Any reconstruction should involve sound changes that are plausible.
2. Any reconstruction should involve as few changes as possible between the proto-language and the daughter language.
3. Reconstruction should fill gaps in phonological systems rather than create unbalanced systems [symmetry].
4. A phoneme should not be reconstructed in a proto-language unless it is shown to be absolutely necessary from evidence within the daughter languages.
5. For each these phonetically 'suspicious' pair of sound correspondences, an examination should be conducted to determine whether or not they are in complementary or contrastive distribution.

The comparative method not only provides the proto form of the language, but also provides a method to determine which languages are historically more closely related to other languages in a family (Crowley 1992).

1.5 Source of linguistic data

The main sources of data were unpublished wordlists (SIL Mainland South East Asia wordlist of 436 core words) collected by Kim and Mann[10] in 1999. Both collected a number of Chin languages and out of those, 19 languages were used in this thesis. To

[10] I am indebted to Ajarns Kim and Mann for allowing me to use these valuable data.

supplement this data, the author transcribed Tedim (his native tongue) and collected wordlists on Zo.

In all 21 Chin languages spoken in Myanmar were analyzed. They are Asho, Bualkhua, Dai, Falam, Hakha, Kaang, Khualsim, Khumi, Lakher, Lautu-Hnaring, Mara, Matu, Mizo, Senthang, Siyin, Taisun, Tedim, Thado (also known as Kuki or Khuangsai), Thangtlang, Zaniat, and Zo. The geographical locations of these languages are shown in Figure 13. Names of languages are in italicized letters whereas the normal letters are location names.

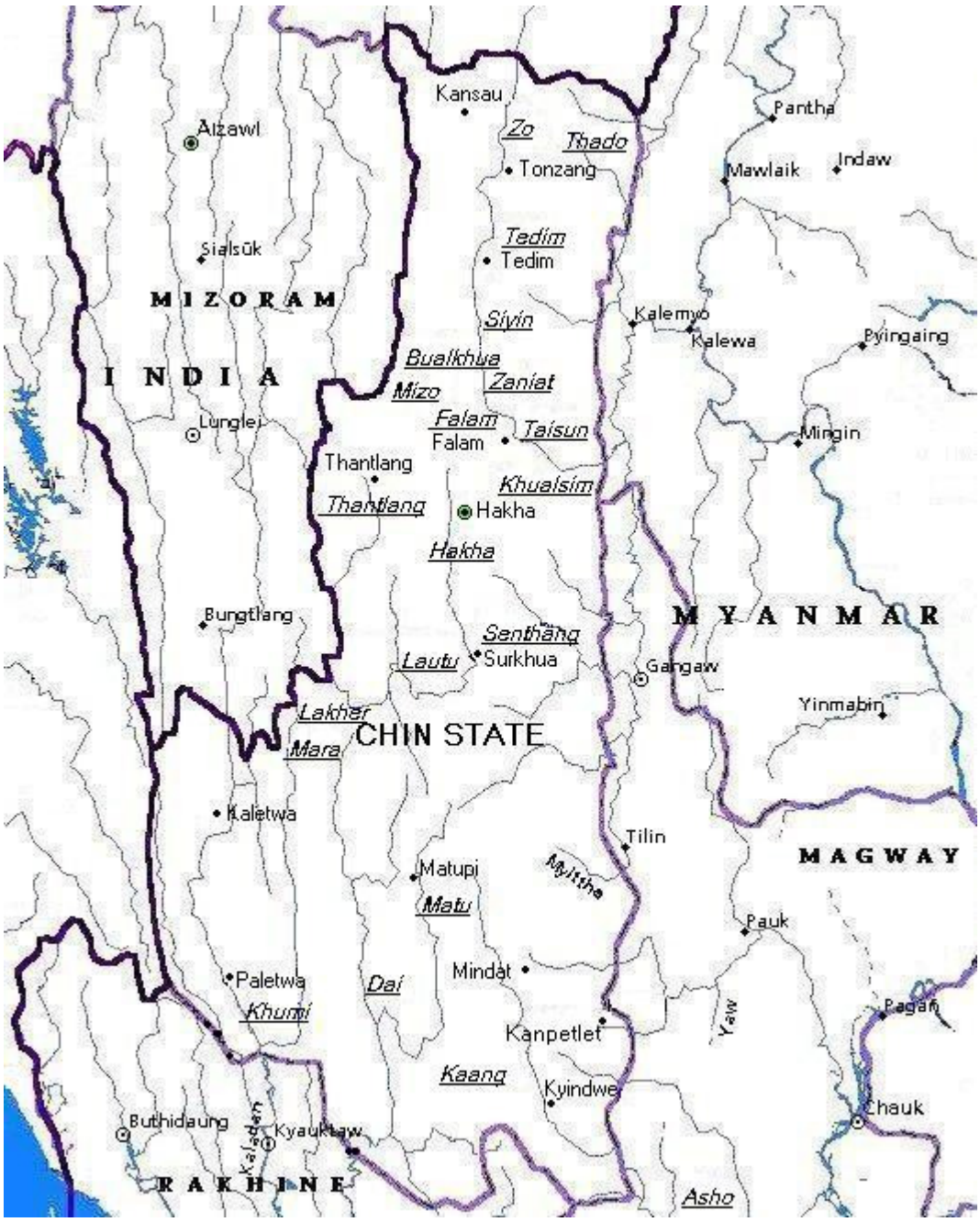


Figure 13. Geographical centers of language groups

Map adapted from Rand McNally (1998)

CHAPTER 2

SELECTION OF REPRESENTATIVE CHIN LANGUAGES

2.0 Introduction

This section discusses how representative languages were selected out of the 21 Chin languages under study for comparative analysis. Lexicostatistic methods were applied to all 21 languages. Based on these results a preliminary subgrouping was proposed and then representative languages were selected from each subgroup.

2.1 Lexicostatistics analysis

Lexicostatistics as a technique is generally associated with glottochronology, the attempt to date the division of languages and dialects from each other on the basis of lexical divergence. Crystal (1980:221) even defines as a technique "to make quantitative comparisons between the rates of change within sets of lexical items in hypothetically related languages … ". However, in the present work lexicostatistic comparison are used to characterize the general degree of divergence of the languages from each other, so that representative languages may be chosen as the basis for historical reconstruction.

Lexicostatistic methods were applied to 21 different Chin languages spoken in Myanmar. The 100 cognates (89 Swadesh and some others from the SIL MSEA wordlist) were chosen and compared between the Chin varieties to determine the degree of lexical similarity. The lexicostatistic method used in this study first determines the root word assuming that the proto language is monosyllabic (Matisoff 1973). Suspected borrowed words were screened-out (see more section 4.1). Then the possible morphological markers and non-root syllables were ignored. Pairs of roots

are then compared on a phoneme-by-phoneme basis, with each pair of phoneme assigned to one of 3 categories according to the following criteria Blair (1990).

Category 1. (a) Exact matches.
(b) Vowels or diphthongs differing by one feature.
(c) Phonetically similar segments in three or more word pairs.

Category 2. (a) Phonetically similar segments in fewer than three word pairs.
(b) Vowels or diphthongs differing by two or more features.

Category 3. (a) Non-phonetically similar segments.
(b) A correspondence with nothing in fewer than three word pairs.

Ignore (a) Reduced syllables and non-root syllables.
(b) A regularly occurring deletion.
(c) Tone.

Category 1(c) and 2(a) relate to the condition of phonetically similar segments. 1(c) is assumed to show a higher degree of probability than 2(a) that the correspondence is not random. Category 1(b) and 2(b) consider that vowels or diphthongs differing by one feature are assumed to have a higher degree of similarity than those differing by two or more features. After assigning the categories for each phone correspondence, the category correlations for each word were added. Then the table (adopted from Blair 1990:32) for minimum conditions is used to determine lexical similarities.

Phones	**Category 1**	**Category 2**	**Category 3**
2	2	0	0
3	2	1	0
4	2	1	1
5	3	1	1
6	3	2	1
7	4	2	1

Table 2. Phone table for lexical similarity (Blair 1990:32)

After each pair of languages has been compared a percentage lexical of similarity is calculated. Table 3 summarizes the lexicostatistic matrix for the 21 Chin languages. It is interesting to note that the lexicostatistic percentages of similarity among the northern languages are higher than the Southern languages.

	Zo	Sinyin	Tedim	Bual	Zanniet	Mizo	Falam	Taisun	Hakha	Thantlang	Khualsim	Senthang	Matu	Kaang	Dai	Asho	Lautu-H	Lakher	Mara	Khumi
Thado	82	81	80	67	67	59	65	62	62	62	60	50	47	48	47	50	39	40	38	40
Zo		85	88	67	66	59	63	61	61	61	61	50	43	45	41	47	38	33	34	38
Sinyin			91	64	69	62	69	65	62	62	62	53	45	46	43	49	36	35	33	37
Tedim				66	69	63	66	63	67	65	63	52	44	46	47	50	39	35	34	38
Bualkhua					88	65	69	69	64	63	60	53	43	45	43	44	37	33	28	33
Zanniet						68	75	75	71	70	68	66	44	47	45	49	41	34	34	38
Mizo							72	76	73	73	65	55	42	47	33	47	44	36	32	31
Falam								87	82	81	80	59	46	43	40	44	38	35	33	34
Taisun									83	81	77	62	44	44	38	41	39	36	32	34
Hakha										95	89	67	47	47	42	47	46	38	36	37
Thantlang											76	66	48	46	43	47	49	35	38	36
Khualsim												68	43	41	37	46	41	38	37	36
Senthang													50	47	41	42	45	38	37	38
Matu														38	35	42	47	38	35	37
Kaang															58	42	37	33	30	48
Dai																48	39	32	31	31
Asho																	36	28	21	36
Lautu-H																		52	51	34
Lakher																			81	34
Mara																				33

Table 3. Matrix of lexicostatistic percentages in 21 Chin language

The percentages of lexicostatistic similarity in Table 3 are consistent with Luce's (1985) findings in which Thado (a northern language) has a 87.8% as opposed to Khumi (a southern language) which has only a 60.4% similarity with other Chin.

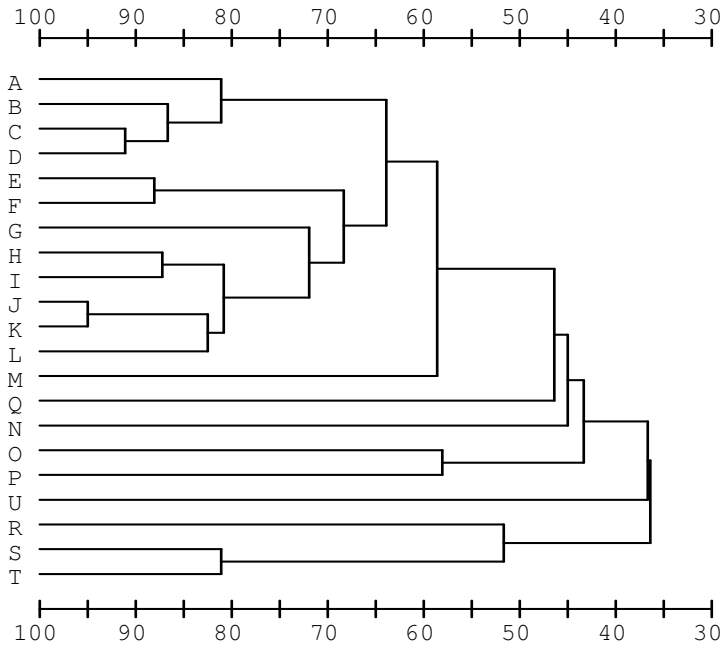
2.2 Turning numbers into trees

The following result[11] (Figure 12) was produced using lexicostatistic counts for 21 Chin languages. The table of apparent cognate percentages was processed using the "Cluster Analysis 1.01" program designed by Ed Quigly (© SIL, Intl.). The Cluster Analysis program provides three algorithm solutions for reducing tables to trees (Grimes 1995:Appendix 1). The Average Link method ("Unweighted Pairs-Grouped Method with Arithmetic Average") gives the best correlation with the data for this data set, a 97% certainty that the relationship between languages is as shown in Figure 4.

[11]The cluster analysis 1.01 program was run by Dr. J. F Bennett.

Percentage of similarity	Names of languages
95.0	Hakha, Thantlang
91.0	Siyin, Tedim
88.0	Bualkhua, Zaniat
87.0	Falam, Taisun
86.5	Zo, Siyin, Tedim
82.5	Hakha, Thantlang, Khualsim
81.0	Thado, Zo, Siyin, Tedim
81.0	Lakher, Mara
80.7	Falam, Taisun, Hakha, Thantlang, Khualsim
71.8	Mizo, Falam, Taisun, Hakha, Thantlang, Khualsim
68.1	Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thantlang, Khualsim
63	Thado, Zo, Siyin, Tedim, Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thantlang, Khualsim
58.4	Thado, Zo, Siyin, Tedim, Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thantlang, Khualsim, Senthang
58.0	Kaang, Dai
51.5	Lautu-Hnaring, Lakher, Mara
46.4	Thado, Zo, Siyin, Tedim, Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thantlang, Khualsim, Senthang, Asho
44.9	Thado, Zo, Siyin, Tedim, Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thantlang, Khualsim, Senthang, Asho, Matu
43.2	Thado, Zo, Siyin, Tedim, Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thantlang, Khualsim, Senthang, Asho, Matu, Kaang, Dai
36.6	Thado, Siyin, Tedim, Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thantlang, Khualsim, Senthang, Asho, Matu, Kaang, Dai, Khumi
36.1	Thado, Zo, Siyin, Tedim, Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thantlang, Khualsim, Senthang, Asho, Matu, Kaang, Dai, Khumi, Lautu-Hnaring, Lakher, Mara

Table 4. Percentage of lexicostatistics similarity

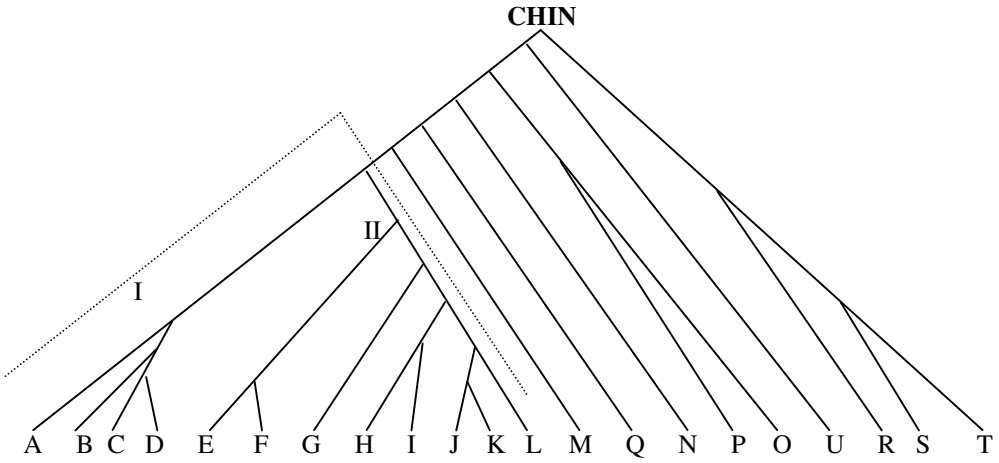


Code	Language name	Code	Language name	Code	Language name
A	Thado	H	Falam	O	Kaang
B	Zo	I	Taisun	P	Dai
C	Siyin	J	Hakha	Q	Asho
D	Tedim	K	Thantlang	R	Lautu-Hnaring,
E	Bualkhua	L	Khualsim	S	Lakher
F	Zaniat	M	Senthang	T	Mara
G	Mizo	N	Matu	U	Khumi

Figure 14. Chin language tree based on average link method

2.3 Preliminary subgrouping

Preliminary subgrouping shown in Figure 15 is based on standard lexicostatistic procedures. Percentage of lexicostatistic similarity shows that there are two main Chin language groups: a Northern group (traditionally the Northern and Central Chin languages) and a Southern groups. The Northern group forms a relatively tight cluster, with lexicostatistic similarity counts of 63% and above; the Southern group shows much more internal diversity.



Code	Language name	Code	Language name	Code	Language name
A	Thado	H	Falam	O	Kaang
B	Zo	I	Taisun	P	Dai
C	Siyin	J	Hakha	Q	Asho
D	Tedim	K	Thantlang	R	Lautu-Hnaring,
E	Bualkhua	L	Khualsim	S	Lakher
F	Zaniat	M	Senthang	T	Mara
G	Mizo	N	Matu	U	Khumi

Figure 15. Preliminary subgrouping of Chin languages

The Northern language (Thado, Zo, Siyin, Tedim, Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thangtlang and Khualsim) can be sub divided into two subgroups: I (Thado, Zo, Siyin and Tedim) and II (Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thangtlang and Khualsim).

The similarity percentages among the traditional Southern languages makes clear subgrouping difficult. Based on the tree above, it is clear that Lautu-Hnaring, Lakher and Mara are in one group and Dai and Kaang are in one group. According to So-Hartman (1988) Southern languages are divided into two subgroups: Khumi and Cho, and Matu is clustered together with Dai and Kaang under Cho subgroup (see Figure 10).

Therefore there may be at least three subgroups among Southern languages: Lautu-Hnaring, Lakher and Mara in one group; Matu, Dai and Kaang in another; and Khumi

in a third. Asho can be clustered with Dai and Kaang group. Senthang is closer to Subgroup II of Northern language family.

2.4 Selected languages

The preliminary subgrouping is a useful and reliable criterion for the selection of representative languages. There are at least five different Chin language subgroups. Based on the preliminary subgrouping, six languages were selected for a phonological reconstruction of Proto Chin. One language from each subgroup was chosen to represent its group and the selected languages were assumed to represent the Chin languages of Chin State in Myanmar.

As subgroup II contains almost half of the languages in this analysis, two languages were selected. They are Mizo and Hakha. Hakha was chosen on the account of being the predominant language in the central part of the Chin State and having a high degree of similarity with languages within the same group. On the other hand, Mizo was chosen as it has been comparatively more studied by linguists, although the majority of speakers live in the Mizoram State of India. The selected languages are Tedim, Mizo, Hakha, Mara, Khumi, and Kaang. These languages are shown in bold type in Table 5 which is adopted the discussion of preliminary subgrouping.

Preliminary Subgrouping of Chin languages				
A		**B**		
I	**II**	**III**	**IV**	**V**
A. Thado	E. Bualkhua	N. Matu	R. Lautu	**U. Khumi**
B. Zo	F. Zaniat	**O. Kaang**	S. Lakher	
C. Siyin	**G. Mizo**	P. Dai	**T. Mara**	
D. Tedim	H. Falam	Q. Asho		
	I. Taisun			
	J. Hakha			
	K.Thantlang			
	L. Khualsim			
	M. Senthang			

Table 5. Selected Chin languages

As Table 5 shows, Tedim represents group I. Mizo and Hakha represent group II. Kaang represents group III. Mara represents group IV and Khumi represents group V.

There are several factors which support the selection of these representative languages. These selected languages are more prominent in their history of literacy. Grierson (1904:666) states that Khumi orthography was first introduced in 1850 by Rev. L. Stilson[12]. The orthography of Mara (Lakher) was developed by Captain S. R. Tickell in 1852, Siyin by Captain Rundall in 1891, and Hakha by Sergeant-Major A. G. E. Newland (IMS) in 1894. The public use of Tedim orthography was relatively advanced such that beginning in the year 1919 the monthly newspaper in Tedim, called the "TEDIM KAM THU KIZAKNA," was regularly published from Madras until 1938. Chin vernacular education in Tedim, Falam, Hakha and Chinbok was started by the British government in 1925.

Among Chin people, the publication of the Bible in various languages proves significant in the history of literature because "the church is the unofficial 'keeper of the languages'" (Chhangte 1993:28). Table 6 shows a list of some Chin languages (both in India and Myanmar) which have received the Bible (Khup Za Go 1996).

Language	**New Testament**	**Entire Bible**
Mara (Lakher)	1928	1956
Mizo (Lusei)	1917	1959
Hmar	1946	1968
Kuki/Thado	1942	1971
Paite	1951	1971
Tedim	1932	1977
Haka	1940	1978
Vaiphei	1957	1979
Falam	1952	1991
Asho	1954	-
Khumi	1957	-

Table 6. The Bible in Chin languages

[12] A reader and spelling book were printed but were largely left unused as the missions withdrew.

Additionally, Mizo (the Duhlian variety) has been used as the lingua franca for the related languages of Chawhte, Hmar, Hnamte, Khawlhring, Khiangte, Ngente, Paihte, Pautu, Pawi, Ralte, Rawite, Renthlei, Tlau, Vangchhia and Zawngte for more than a century (Chhangte 1993:1). Hakha and Tedim are also lingua franca among the languages in their area.

Considering previous reconstruction of Chin languages, Ono (1965) analyzes Tedim, Ngawn, Hakha, Falam, Anal, Zotung, Khumi and Chinbok. Solnit (1979) uses Tedim and Lushai data, and Bhaskararao (1996) compares the lexicon in Tedim and Lushai. Mizo is probably the most analyzed Chin language.

Geographically, the representative languages are well distributed in the Chin State. Tedim live in the extreme north of Chin State. The Mizo[13] live in south-western Tedim and western Falam Townships. The Hakha and Mara speaking communities live in the central part of the Chin State. The Kaang live in the southeast of the Chin State in Mindat and Kanpetlet Townships. The Khumi live in Paletwa Township in the southwest of the Chin State close to Bangladesh.

[13] The Mizo living in Tedim and Falam township are known as Hualngo and the majority live in the Mizoram State of India.

CHAPTER 3

OVERVIEW OF SELECTED LANGUAGES

3.0 Introduction

The selection of six languages for phonological reconstruction has been discussed in chapter 2. The phonological overview is mainly helpful for phonemicizing the phonetic transcriptions of wordlists in the selected languages for phonological comparison to support reconstruction. It is also useful to see how each language is innovative or conservative based on comparison of the consonant and vowel inventories between each language and the reconstructed proto Chin. Therefore, this chapter will provide an overview of each of the selected language. The overview includes a brief description of the language, the syllable canon, consonant inventory, vowel inventory, segment distribution and tone.

3.1 Tedim

The loconym name Tedim is used in this thesis, though Tedim was previously known as Sukte[14], Kam Hau[15] and the allogram Tiddim. The name Tedim is the emic representation of the name, which is consistent with Tedim phonology and its spelling in Tedim orthography.

3.1.1 Brief description

The Tedim live in Tedim and Tonzang Townships of the Chin State and also in the Kalay and Kabaw valleys in the Sagaing division of Myanmar; and Manipur and

[14] 'Sukte' is an archaic name which is derived from the clan name of an ancient Tedim chief.

[15] This archaic name is derived from the personal name of the chief before and during the time of the British rule on Chin Hill. Bradley (1997:26) says that "geographical names are sometimes used instead of the rather specific subgroup names; for example, Tiddim Chin instead of Kamhau Chin."

Mizoram States of India. According to Grimes (1996) there are 189,100 Tedim speakers in Myanmar.

3.1.2 Syllable structure

The syllable canon of Tedim can be generalized as $(C_1)V_1(V_2)(C_2)T$. The parentheses show optional elements. The onset is composed of (C_1). The nucleus is composed of either an obligatory vowel V_1 as monophthong or a diphthong $V_1(V_2)$. The coda (C_2) is consonant final and T represents the tone. Examples of possible syllable sharps are provided in Table 7.

Ref. No.	English gloss	Tedim transcription	Syllable sharps
437	elder bro. of m	uːꞱ	V:
081	dog	uiʌ	VV
099	chicken	akꞱ	VC
002	sun	niꞱ	CV
212	fire	meiʌ	CVV
266	itch	t^hakꞱ	CVC
121	brain	k^huakʌ	CVVC

Table 7. Examples of syllable sharps in Tedim

3.1.3 Consonants

The phonemic consonant inventory of Tedim is shown in Table 8.

	Labial	Coronal	Dorsal	Glottal
Voiceless stops	p	t	k	
Voiceless aspirated stops	p^h	t^h	k^h	
Voiced stops	b	d	g	
Voiced nasals	m	n	ŋ	
Voiceless Fricative		s		h
Voiced fricatives	v	z		
Voiced lateral approximant		l		

Table 8. Tedim consonant inventory

Luce (1985) and Namkung (1996) list the voiceless dorsal fricative /χ/ in the phonological inventory which is synchronically in free variation with the aspirated dorsal stop /k^h/. Therefore /k^h/→[k^h] ~[χ]/$___. The voiceless coronal stop /t/

becomes the voiceless coronal affricate /ts/ before a close unrounded front vowel /t/→ [ts]/___i, and voiceless aspirated coronal stop /t^h/ is realized as a voiceless coronal fricative /s/ before a close unrounded front vowel /t^h/→ [s]/___i. Bhaskararao (1989:110) also mentions the same process with the exception of chimming adverbs[16]. The glottal stop [ʔ] is predictable whenever the low tone occurs or vice versa.

3.1.4 Vowels

Tedim has five phonemic vowels as shown in Table 9. The close mid front vowel /e/ is realized as an open mid front vowel [ɛ] in a closed syllable with either falling or low tone, /e/→[ɛ]/C___C. The close mid back vowel /o/ is realized as an open mid back vowel [ɔ] in a closed syllable with either falling or low tone, /o/→[ɔ]/C___C. The open front vowel /a/ is slightly different in its realization from [a] to [ɑ].

	Front	**Back**
Close	i	u
Close mid	e	o
Open	a	

Table 9. Tedim vowel inventory

3.1.5 Segment distribution

All consonants occur in the initial (C_1) position. There is no restriction on which vowels appear in the V_1 position. For diphthongs $V_1(V_2)$ the second vowel (V_2) is restricted to vowels at the extreme margins of the phonemic inventory such as the

[16] According to Henderson (1965:57) a chimming adverb is "… a special kind of duplicated adverb, very common in colloquial style, in which there is a variation in the vowels of the adverb…". For example in Tedim 'to sit' is [tu˧]; 'to sit confidently' [tu˧ hiat˥ huat˥], 'to sit secretly' [tu˧ k^hian˥/k^huan˥], 'to sit a fatty man' [tu˧ kei˧ kai˧], and 'to sit in group with fun' [tu˧ ŋei˥/ŋai˥].

close unrounded front vowel /i/, close rounded back vowel /u/ and open vowel /a/ as shown in Table 10.

	Front	**Back**
Close	iu ia	ui ua
Close mid	ei eu	oi
Open	ai au	

Table 10. Tedim diphthongs

The final consonant (C_2) is restricted to voiceless stops, voiced nasals and the lateral approximant as shown in Table 11.

	Labial	**Coronal**	**Dorsal**
Voiceless stops	p	t	k
Nasals	m	n	ŋ
Lateral approximant		l	

Table 11. Tedim final consonants

3.1.6 Tone

The suprasegmental consideration of tone in Tedim has been discussed in the works of Henderson (1965), Vul Za Thang and J. Gin Za Tuang (1975), Weidert (1987), Zolai Zuunna (1982), Luce (1985) and Ostapirat (1998). According to Henderson (1965:19) "the high falling pitch becomes low falling or low level pitch in short syllables with abrupt syllable closure." Weidert (1987) includes but Namkung (1996) excludes low tone from the phonemic inventory. Ostapirat (1998:235) says,

> …the three tones in smooth syllables arise from different types of laryngeal endings interacting with vowel length, and that original checked syllables only took two tones, also depending on vowel length.

The current analysis is consistent with the previous works. There are three contrastive tones. They are rising tone /˥˦/, mid tone /˧/ and falling tone /˦˩/. The low tone /˩/ is predictable, occurring in stopped syllables with a medial short vowel. The tonal distribution in different syllable types can be generalized as shown in Table 12.

	Smooth syllables			Stopped syllables
	Open rhyme	**Nasal finals**	**Lateral finals**	
Rising tone	Short vowel	m n ŋ	l	-
	Long vowel	m n ŋ	l	p t k
Mid tone	Short vowel	m n ŋ	l	-
	Long vowel	m n ŋ	l	k (<*r)
Falling tone	Short vowel	m n ŋ	l	-
	Long vowel	m n ŋ	l	k
Low tone	Short vowel	-	-	p t k

Table 12. Tedim tone distribution

Rising tone occurs in both open and stopped syllables. The open syllable has no restrictions on the type of medial vowel. In a closed syllable with rising tone, the final consonant is restricted to the voiceless stop series /p/, /t/ and /k/, the nasal series /m/, /n/ and /ŋ/ and lateral approximant /l/. The nasal series and lateral have no restriction in the type of medial vowel, whereas the stop series are restricted to a short medial vowel.

The mid tone occurs in both open and closed syllables. There is no restriction on the medial vowel length. In closed syllables, the final consonant is restricted to the nasal series, lateral approximant /l/ and the voiceless coronal stop /k/ which is the reflex of *r (Luce 1985). Voiceless coronal stops occur only after a short medial vowel, whereas the nasal series occur without restriction on any types of medial vowel.

Falling tone has the same distribution as mid tone, with the following exceptions. Any verb form in a stopped syllable with falling tone is form II. According to Henderson (1965) Tedim verbs may be distinguished from all other classes of words by their “formal scatter”. In particular, verbs have two alternating forms, dependent upon grammatical context. Verbs which can be predicted from another verb form are called Form II or *irregular* verbs, and those verbs from which Form II can be predicted are called Form I or *regular* verbs. For instance; ‘to ride’ is [tuaŋ˧], but when the verb is nominalized it becomes [tuan˥˩na˧], and in the adverbial phrase

'when he rides' it appears as [a˧ tuan˥ tsiaŋ˩in˧]. Table 13 shows some other examples with different syllable sharps.

English gloss	Syllable type	Form I	Form II
to flow	CVVC	luaŋ˧	luan˥
to beat	CVC	sat˩	sat˥
to go	CVV	pai˧	pai˥
to feel pain or sick	CV	na˧	nat˧

Table 13. Examples of Tedim verb forms in different syllable sharps

Low tone occurs only in closed syllables. The final consonants are restricted to voiceless stops /p/, /t/ and /k/.

3.2 Mizo

The name Mizo is used in this thesis in favor of the archaic name Lushei. Its syllable canon, consonant inventory, vowel inventory, segment distribution and the tone are briefly discussed in this section.

3.2.1 Brief description

The Mizo were originally called Duhlian (Thanga L.B. 1992:144) and were also known as Lushei. Today, many Mizo varieties have been assimilated into a language identified as Mizo. Chhangte (1993:1), a noted linguist among the Mizo says:

> Nowadays the term Mizo refers not only to the Luseis but also other tribes such as: Chawhte, Hmar, Hnamte, Khawhring, Khiangte, Ngente, Paihte, Pautu, Ralte, Rawite, Renthei, Tlau, Vangchia and Zawngte. … Modern spoken Mizo is more or less the same as the language of the Lusei tribe (also known as Lushai) and has been the lingua franca of the area for a century.

According to Chhangte (1993:38) Mizo has the most conservative phonology among Kuki-Chin languages. Mizo is probably one of the most studied Chin languages.

Within the Chin State the Mizo are known as Hualngo (Grierson 1904 spells it Whenos). They live in the western part of Tedim and Falam Townships of the Chin State. Many Mizo speakers live in the Kalay and Kabaw valleys of the Sagaing Division. Grimes (1996) estimates 12,500 Mizo speakers in Myanmar. According to a Mizoram website[17] there is a population of 891,058 in Mizoram State as of 2001. More than 90% of the populace in the Mizoram State speaks Mizo.

3.2.2 Syllable structure

The syllable canon for Mizo can be generalized as $(C_1)(C_2)V_1(V_2)(C_3)T$. The parentheses show optional elements. The onset is composed of $(C_1)(C_2)$ in which (C_1) is an optional initial consonant and (C_2) is the second consonant in a consonant cluster. The nucleus is composed of either an obligatory monophthong V_1 or a diphthong $V_1(V_2)$. The coda is composed of (C_3), which is a final consonant, and T represents tone. Examples of possible syllable sharps are provided in Table 14.

Ref. No.	English gloss	Mizo transcription	Syllable type
437	elder bro. of m	uːˀ	V:
081	dog	uiˊ	VV
099	chicken	aːrˀ	VC
002	sun	niːˀ	CV
212	fire	meiˊ	CVV
266	itch	t^hakˡ	CVC
003	moon	t^hlaːˋ	CCV
035	mountain	tlaːŋˀ	CCVC
412	crested	$tʃ^h$uaŋˀ	CVVC
121	brain	t^hluakˋ	CCVVC

Table 14. Examples of syllable sharps in Mizo

[17] http://www.mizoram.nic.in

3.2.3 Consonants

Table 15 shows the consonant inventory of Mizo. Chhangte (1993) omits glottal stop /ʔ/ in her consonant inventory. Namkung (1996) includes /t^hl/ and /tl/ as single unit phonemes.

	Labial	**Coronal**	**Retroflex**	**Dorsal**	**Glottal**
Voiceless stops	p	t	ʈ	k	ʔ
Voiceless aspirated stops	p^h	t^h	$ʈ^h$	k^h	
Voiced stops	b	d			
Voiced nasals	m	n		ŋ	
Voiceless nasals	m̥	n̥		ŋ̊	
Voiced trill		r			
Voiceless trill		r̥			
Voiceless affricate		ts			
Voiceless aspirated affricate		$tʃ^h$			
Voiceless fricatives	f	s			h
Voiced fricatives	v	z			
Voiced lateral approximant		l			
Voiceless lateral approximant		l̥			

Table 15. Mizo consonant inventory

3.2.4 Vowels

Mizo has five cardinal vowels in its vowel inventory as shown in Table 16. The close mid front vowel /e/ is realized as an open mid front vowel [ɛ] in a closed syllable with either falling or low tone, /e/→[ɛ]/C___C. The close mid back vowel /o/ is realized as an open mid back vowel [ɔ] in a closed syllable with either falling or low tone, /o/→[ɔ]/C___C. The open front vowel /a/ is slightly different in its realization from [a] to [ɑ].

	Front	**Back**
Close	i	u
Close mid	e	o
Open	a	

Table 16. Mizo vowel inventory

3.2.5 Segment distribution

The distribution of segmental in Mizo can be summarized as follows. There is no restriction for initial consonant (C_1). The second consonant (C_2) however, is limited to /l/ after /t/ or /t^h/. The monophthong V_1 has no restriction but the (V_2) element in the diphthong $V_1(V_2)$ is restricted to open vowel /a/, the close unrounded front vowel /i/ or the close rounded back vowel /u/ as Table 17 shows.

	Front	**Back**
Close	iu ia	ua ui
Close mid	ei eu	oi
Open	ai au	

Table 17. Mizo diphthongs

The final consonant (C_3) is restricted to voiceless stops, nasals, voiced trill and voiced lateral approximant and the glottal stop as shown in Table 18.

	Labial	**Coronal**	**Dorsal**
Voiceless stops	p	t	k
Voiced nasals	m	n	ŋ
Voiced trill		r	
Voiced lateral approximant		l	

Table 18. Mizo final consonants

The glottal stop /ʔ/ occurs after /r/ or /l/. Namkung (1996) considers the phonemes /rʔ/ and /lʔ/ as a single units in a closed syllable. The glottal stop as predictable

3.2.6 Tone

According to Namkung (1996) there are three contrastive tones in Mizo. They are rising tone/˥˧/, mid tone /˧/, and falling tone /˧˩/. Chhangte (1985) states that there are four tones, adding high tone /˥/.

In this analysis there are five contrastive tones in Mizo, high tone /˥/, rising tone /˧˥/, mid tone /˧/, falling tone /˥˩/ and low tone /˩/. The tonal distribution in different syllable types in Mizo can be generalized as shown in Table 19.

	Smooth syllables			Stopped syllables
	Open rhyme	**Nasal finals**	**Liquid finals**	
Rising tone	Monophthong	m n ŋ	r l	-
	Diphthong and long	m n ŋ	-	k
Mid tone	Monophthong	m n ŋ	-	-
	Diphthong and long	m n ŋ	r l	k t
Falling tone	Monophthong	m n ŋ	r l	k t p
	Diphthong and long	m n ŋ	-	-
High tone	Monophthong	m n ŋ	r l	-
	Diphthong and long	m n ŋ	r l	k
Low tone	Monophthong	m n ŋ	r l	t k ʔ

Table 19. Mizo tone distribution

3.3 Hakha

Hakha is the language spoken in the central part of Chin State. The brief description, syllable canon, consonant inventory, vowel inventory, segmental distribution and tone are discussed in this section.

3.3.1 Brief description

The Hakha language was formerly known as Bawngshe which was derived from a Burmese word, meaning ‘hair-knot over forehead’ (Grierson 1904:552). The language is mainly spoken in Hakha and Thantlang Townships. Modern linguists like George Bedell and others use the term ‘Lai’ for Hakha. Hakha speakers also live in Bangladesh, India and the plain region of Myanmar. According to Grimes (1996) the Hakha population estimate is 100,000 in Myanmar, with an addition 1000 speakers outside of Myanmar.

3.3.2 Syllable structure

The syllable canon for Hakha can be summarized as $(C_1)(C_2)V_1(V_2)(C_3)T$. The parentheses show optional elements. The onset is composed of $(C_1)(C_2)$ in which (C_1) is an initial consonant and (C_2) is the second consonant in a consonant cluster. The nucleus is composed of either an obligatory vowel V_1 as monophthong or the diphthong $V_1(V_2)$. The final consonant is (C_3) and T represents tone. Examples of possible syllable sharps are provided in Table 20.

Ref. No.	English gloss	Hakha transcription	Syllable type
437	elder bro. of m	uːˀ	V:
081	dog	uiˋ	VV
099	chicken	aːrˀ	VC
002	sun	niːˋ	CV
212	fire	meiˋ	CVV
266	itch	tʰakˌ	CVC
003	moon	tʰlaˋ	CCV
035	mountain	tlaŋˋ	CCVC
412	crested	tʃʰuaŋˋ	CVVC
121	brain	tʰluakˋ	CCVVC

Table 20. Examples of syllable sharps in Hakha

3.3.3 Consonants

The consonant inventory of Hakha is shown in Table 21.

	Labial	Coronal	Retroflex	Dorsal	Glottal
Voiceless stops	p	t	ʈ	k	
Voiceless aspirated stops	p^h	t^h	$ʈ^h$	k^h	
Voiced stops	b	d			
Voiced nasals	m	n		ŋ	
Voiceless nasals	m̥	n̥		ŋ̊	
Voiced trill		r			
Voiceless trill		r̥			
Voiceless affricate		ts			
Voiceless aspirated affricate		$tʃ^h$			
Voiceless fricatives	f	s			h
Voiced fricatives	v	z			
Voiced lateral approximant		l			
Voiceless lateral approximant		l̥			

Table 21. Hakha consonant inventory

3.3.4 Vowels

There are five cardinal vowels in Hakha as shown in Table 22. The close mid front vowel /e/ is realized as an open mid front vowel [ɛ] in a closed syllable with either falling or low tone /e/→[ɛ]/C___C. The close mid back vowel /o/ is realized as an open mid back vowel [ɔ] in a closed syllable with either falling or low tone, /o/→[ɔ]/C___C. The open front vowel /a/ is slightly different in its realization from [a] to [ɑ].

	Front	Back
Close	i	u
Close mid	e	o
Open	a	

Table 22. Hakha vowel inventory

3.3.5 Segment distribution

The distribution of Hakha segmental can be summarized as follows. All consonants appear as initial consonant (C_1). However the second consonant in an initial consonant cluster (C_2) is limited to /l/ after /t/ or /t^h/. The monophthong V_1 has no limitation but whenever the diphthong $V_1(V_2)$ occurs the second vowel (V_2) is restricted to either the open vowel /a/, close unrounded front vowel /i/ or close rounded back vowel /u/. Table 23 shows the diphthongs in Hakha.

	Front	**Back**
Close	iu ia	ui ua
Close mid	ei eu	oi
Open	ai au	

Table 23. Hakha diphthongs

The final consonant (C_3) is restricted to voiceless stops, nasals, liquids and the glottal stop as shown in Table 24.

	Labial	**Coronal**	**Dorsal**
Voiceless stops	p	t	k
Voiced nasals	m	n	ŋ
Voiced trill		r	
Voiced lateral approximant		l	

Table 24. Hakha final consonants

The second consonant in the final consonant cluster (C_4) is restricted to glottal stop /ʔ/ and occurs only after the liquids /r/ and /l/. The clusters [rʔ] and [lʔ] are considered single units by Namkung (1996).

3.3.6 Tone

Matisoff (1998) claims that Hakha does not have tone, but later he was convinced that Hakha is indeed a tonal language (p. c. October 4 2000). The current analysis shows that there are at- least five contrastive tones. They are high tone /˥/, rising tone

/˥/, mid tone /˧/, falling tone/˥˩/, and low tone /˩/. The tonal distribution in different syllable types in Hakha can be generalized as shown in Table 25.

	Smooth syllable			Stopped syllables
	Open rhyme	**Nasal finals**	**Lateral finals**	
Rising tone	Monophthong	m n ŋ	r l	-
	Diphthong and long	m n ŋ	r l	-
Mid tone	Monophthong	m n ŋ	r l	p t k
	Diphthong and long	m n ŋ	r l	p t k
Falling tone	Monophthong	m n ŋ	r l	-
	Diphthong and long	m n ŋ	-	p t k ʔ
High tone	Monophthong	m n ŋ	r l	p t k ʔ
	Diphthong and long	m n ŋ	r l	-
Low tone	Monophthong	m n ŋ	r l	p t k ʔ

Table 25. Hakha tone distribution

3.4 Mara

According to Bradley (1997) Mara (also known as Lakher[18] in India) is neither a member of Central Chin or Southern Chin. Instead, he lists it under his "Other Chin Groups". Its brief description, syllable canon, consonant inventory, vowel inventory, segmental distribution and tone are described in the following discussion.

3.4.1 Brief description

Mara (the autoethnonym) live in the Thantlang and Matupi Townships of Myanmar and its adjacent region in the Mizoram State of India. The language and culture are being assimilated into the Mizo (Bradley 1997:30). There are 20,000 speakers in Myanmar, out of a total population of 41,000 speakers in all countries (Grimes 1996).

Mara is significant among Chin languages for the absence of final consonants. This description is consistent with previous scholarship; "Mara is peculiar… for it is quite

[18] "'Lakher' is a Central Chin and Mizo (Lushai) word for the native cotton gin, which is made preeminently by the Lakher" (Lehman 1990:19).

without closed syllables" (Lehman 1990:1) and "(Mara) … has lost all its final consonants, except perhaps for a faint glottal stop" (Luce 1985:83).

3.4.2 Syllable structure

The syllable canon for Mara can be generalized as $(C_1)(C_2)V_1(V_2)T$. The parentheses show optional elements. The onset is composed of $(C_1)(C_2)$ in which (C_1) is an optional initial consonant and (C_2) is the second consonant in an initial consonant cluster. The nucleus is composed of $V_1(V_2)$ in which V_1 represents an obligatory monophthong and $V_1(V_2)$ represents a diphthong. T represents tone. Examples of possible sharps are provided in Table 26.

Ref. No.	English gloss	Mara transcription	Syllable type
247	shout	oː˧	V:
002	sun	niˊ	CV
212	fire	mei˥	CVV
003	moon	tʰla˧	CCV

Table 26. Examples of syllable sharps in Mara

3.4.3 Consonants

The consonant inventory of Mara is shown in Table 27.

	Labial	Coronal	Dorsal	Glottal
Voiceless stops	p	t	k	ʔ
Voiceless aspirated stops	p^h	t^h	k^h	
Voiced stops	b	d		
Voiced nasals	m	n	ŋ	
Voiceless nasals	m̥	n̥	ŋ̊	
Voiced trill		r		
Voiceless trill		r̥		
Voiceless affricate		ts		
Voiceless aspirated affricate		$tʃ^h$		
Voiceless fricatives		s		h
Voiced fricatives	v	z		
Voiced lateral approximant		l		
Voiceless lateral approximant		l̥		

Table 27. Mara consonant inventory

3.4.4 Vowels

Mara has five cardinal vowels in its vowel inventory as shown in Table 28. The close mid front vowel /e/ is realized as an open mid front vowel [ɛ] in syllable with low tone, /e/→[ɛ]/___$L. The close mid back vowel /o/ is realized as an open mid back vowel [ɔ] in syllable with low tone, /o/→[ɔ]/___$L. The open front vowel /a/ is slightly different in its realization from [a] to [ɑ].

	Front	Back
Close	i	u
Close mid	e	o
Open	a	

Table 28. Mara vowel inventory

3.4.5 Segment distribution

There are no restrictions on consonants in the initial position (C_1) while the second consonant (C_2) is restricted to /l/. The nucleus is composed of V_1, which is obligatory and has no restrictions, where (V_2) is an optional second element in a diphthong and

is restricted to the open vowel /a/, close unrounded front vowel /i/ and close rounded back vowel /u/. Table 29 shows the distribution of diphthongs in Mara.

	Front	**Back**
Close	iu ia	ua ui
Close mid	ei eu	oi
Open	ai au	

Table 29. Mara diphthongs

3.4.6 Tone

There are at least three contrastive level tones in Mara. They are high tone /˥/, mid tone /˧/, and low tone /˩/. Mara does not have falling and rising contour tones. The distribution of tone in Mara is shown in Table 30.

	Smooth syllables
Mid tone	Monophthong, Diphthong and long
High tone	Monophthong, Diphthong and long
Low tone	Monophthong

Table 30. Mara tone distribution

3.5 Khumi

The Khumi or Khami group includes several diverse dialects, which fall into two subgroups; Khumi and Khimi. So-Hartmann (1988:100) says, "They themselves (Khumi) explain their name as being derived from *Khu* or *Kho* 'soil, earth' and *mi* 'man'". Its brief description, syllable canon, consonant inventory, vowel inventory, segment distribution and tone are discussed in the following section.

3.5.1 Brief description

Bradley (1997) lists Khumi under "Other Chin Groups". So-Hartmann (1988) lists it together with the Southern group. They live mainly in Paletwa Township of Chin State and in Bangladesh and India. There are 76,700 Khumi speakers in Myanmar (Grimes 1996).

3.5.2 Syllable structure

The syllable canon for Khumi can be generalized as $(C_1)(C_2)V_1(V_2)(C_3)T$. The initial consonant (C_1) and the second consonant (C_2) in the initial consonant cluster compose the onset. The nucleus is composed of an obligatory vowel V_1 as monophthong or the diphthong $V_1(V_2)$. The coda (C_3) is a final consonant. T represents tone. T represents tone. Examples of possible syllable types are provided in Table 31.

Ref. No.	English gloss	Khumi transcription	Syllable type
167	excrement	eːˀ	V:
081	dog	uiˀ	VV
002	sun	n̥iːˀ	CV
212	fire	m̥aiˀ	CVV
003	moon	tʰ̥laː˧	CCV
266	itch	tʰaːkˊ	CVC

Table 31. Examples of syllable sharps in Khumi

3.5.3 Consonants

The consonant inventory of Khumi is shown in Table 32.

	Labial	Coronal	Dorsal	Glottal
Voiceless stops	p	t	k	ʔ
Voiceless aspirated stops	pʰ	tʰ	kʰ	
Voiced stops	b	d	g	
Voiced nasals	m	n	ŋ	
Voiceless nasals	m̥	n̥	ŋ̊	
Voiced trill		r		
Voiceless fricatives		s		h
Voiced fricatives	v			
Voiced approximant			j	
Voiced lateral approximant		l		
Voiceless lateral approximant		l̥		

Table 32. Khumi consonant inventory

3.5.4 Vowels

There are five cardinal vowels in Khumi as shown in Table 33. Segments enclosed in [brackets] are phonetic while those segments without brackets are phonemic. The close mid front vowel /e/ is realized as an open mid front vowel [ɛ] in a closed syllable with either falling or low tone /e/→[ɛ]/C___C. The close mid back vowel /o/ is realized as an open mid back vowel [ɔ] in a closed syllable with either falling or low tone, /o/→[ɔ]/C___C. The open front vowel /a/ is slightly different in its realization from [a] to [ɑ].

	Front	**Back**
Close	i	u
Close mid	e	o
Open	a	

Table 33. Khumi vowel inventory

3.5.5 Segment distribution

All consonants are allowed in the optional initial consonant (C_1), while the second consonant (C_2) a consonant cluster is limited to /r/ and /l/. The alveolar trill /r/ occurs after voiceless coronal stops /k/ or voiceless labial stops /p/. The voiced lateral approximant /l/ appears only after voiceless coronal stops /t/ and voiceless aspirated coronal stops /t^h/. The nucleus is composed of an obligatory vowel V_1 without restrictions. Whenever the diphthong $V_1(V_2)$ occurs, the second vowel (V_2) is limited to vowels at the extreme margins of the vowel inventory as shown in Table 28.

	Front	**Back**
Close	iu ia	ua ui
Close mid	ei eu	oi
Open	ai au	

Table 34. Khumi diphthong inventory

The coda (C_3) is restricted to nasals and voiceless stops with the exception of voiceless bilabial stop as shown in Table 35. T represents tone.

	Labial	**Coronal**	**Dorsal**	**Glottal**
Voiceless stops		t	k	ʔ
Voiced nasals	m	n	ŋ	

Table 35. Khumi final consonants

3.5.6 Tone

There are at least four contrastive tones in Khumi. They are high tone /˥/, rising tone /˧˥/, mid tone /˧/, and low tone /˩/. Khumi does not have falling tone. The distribution of tone in Khumi is shown in Table 36.

	Smooth syllable		**Stopped syllables**
	Open rhyme	**Nasal finals**	
Rising tone	Monophthong	n ŋ	k
	Diphthong and long	n ŋ	k
Mid tone	Monophthong	n ŋ	k
	Diphthong and long	-	-
High tone	Monophthong	n ŋ	k
	Diphthong and long	-	k
Low tone	Monophthong	n ŋ	t k

Table 36. Khumi tone distribution

3.6 Kaang

Kaang is closely related to Ngmuun and Dai. A brief description of Kaang, its syllable canon, consonant inventory, vowel inventory, segment distribution and tone are discussed in this section.

3.6.1 Brief description

According to Lehman (1963:85) “The literature speaks of ‘the M’kaang’ as ‘the cane-bellied Chin,’ because men and boys wear girdles formed of numerous rounds of red-

dyed cane." They call themselves 'Kaang' (Lehman 1963:85) and live in three villages in Mindat Township: Kkyuk (Thluk), You Phong and Hla Tui (So-Hartmann 1988:100). Grimes (1996) lists Kaang together with Dai and Muun as having similar linguistic features and estimates the Kaang population at 30,000.

3.6.2 Syllable structure

The syllable canon for Kaang can be generalized as $(C_1)(C_2)V_1(V_2)(C_3)T$. The parentheses show optional elements. The optional initial consonant (C_1) and the second consonant (C_2) in an initial consonant cluster compose the onset. The nucleus is composed of either an obligatory vowel V_1 as a monophthong or the diphthong $V1(V_2)$. The coda (C_3) is a final consonant in a closed syllable. T represents tone. Examples of possible syllable sharps are provided in Table 37.

Ref. No.	English gloss	Kaang transcription	Syllable type
106	frog	u˧	V
081	dog	ui˥	VV
002	sun	n̥i˥	CV
212	fire	mei˥	CVV
003	moon	kʰra:˩	CCV
266	itch	tʰak˧	CVC

Table 37. Examples of syllable sharps in Kaang

3.6.3 Consonants

The consonant inventory of Kaang is shown in Table 38. So-Hartmann (1988) remarks that Kaang has lost the prenasalization and preglottalization found in the other Southern dialects and has /f/ in its consonant inventory. In Kaang /t^h/ is changed into [s] before close front vowel, $t^h \rightarrow$ s/___i.

	Labial	Coronal	Dorsal	Glottal
Voiceless stops	p	t	k	ʔ
Voiceless aspirated stops	p^h	t^h	k^h	
Voiced stops	b	d		
Voiced nasals	m	n	ŋ	
Voiceless nasals	m̥	n̥	ŋ̊	
Voiced trill		r		
Voiceless trill		r̥		
Voiceless unaspirated affricate		ts		
Voiceless aspirated affricate		ts^h		
Voiceless fricatives	f	s		h
Voiced fricatives	v			
Voiced palatal approximant			j	
Voiced lateral approximant		l		
Voiceless lateral approximant		l̥		

Table 38. Kaang consonant inventory

3.6.4 Vowels

Kaang has five cardinal vowels and three central vowels as shown in Table 39**.** Segments enclosed in [brackets] are phonetic while those segments without brackets are phonemic. The close mid front vowel /e/ is changed to open mid front vowel [ɛ] in a closed syllable with either falling or low tone /e/→[ɛ]/C__C. The close mid back vowel /o/ is also changed to open mid back vowel [ɔ] at the position of closed syllable type with either falling or low tone, /o/→[ɔ]/C__C. The open front vowel /a/ is slightly different in its realization from [a] to [ɑ].

	Front	Central	Back
Close	i	ɨ ʉ	u
Close mid	e		o
Open mid		ə	
Open	a		

Table 39. Kaang vowel inventory

3.6.5 Segment distribution

All consonants can appear in the initial consonant (C_1) position. The second consonant in an initial cluster (C_2) is restricted to /r/. The /r/ occurs after voiceless and aspirated labial stop /p/ and dorsal stop /k/. The nucleus is composed of either a monophthong vowel V_1 or diphthong V_1 (V_2). V_1 has no restrictions but (V_2) is restricted to the close front vowel /i/ and open vowel /a/ as shown in Table 40.

	Front	**Central**	**Back**
Close	ia	ɨa ʉi	ua ui
Close mid	ei	əi	oi
Open	ai		

Table 40. Kaang diphthongs

The final consonant (C_3) is restricted to the voiced nasal and voiceless stop series as shown in Table 41.

	Labial	**Coronal**	**Dorsal**	**Glottal**
Voiceless stops	p	t	k	ʔ
Voiced nasals	m	n	ŋ	

Table 41. Kaang final consonants

3.6.6 Tone

Based on current analysis, Kaang has five contrastive tones composed of three level tones and two contour tones. They are high tone /˥/, mid tone /˧/, low tone /˩/, rising tone /˧˥/,and falling tone /˥˩/. Table 42 shows the tone distribution by syllable type in Kaang.

	Smooth syllable		Stopped syllable
	Open rhyme	**Nasal final**	
Rising tone	Monophthong Diphthong and long	m n ŋ -	p k -
Mid tone	Monophthong Diphthong and long	m n ŋ -	p k -
Falling tone	Monophthong Diphthong and long	m n ŋ -	p k k
High tone	Monophthong Diphthong and long	m n ŋ -	p k k
Low tone	Monophthong Diphthong and long	m n ŋ -	p k -

Table 42. Kaang tone distribution

3.7 Brief summary

An overview of the six representative Chin languages based on the significant features of consonants, vowels and tones, is briefly discussed in this section.

Regarding initial consonants, all languages share the voiceless aspirated and unaspirated stop series. Khumi and Tedim have voiced dorsal stops whereas the other Chin languages do not. Tedim does not have the voiceless nasal series and coronal trill while the other Chin languages have voiceless and voiced sets. Mizo, Hakha and Mara have two affricates. Only Mizo, Hakha and Khumi have voiceless labial fricatives [f]. Tedim has the only voiced lateral approximant [l] while the other languages have voiced and voiceless lateral approximants [l] [l̥]. All languages share the voiced labial fricative [v] and voiceless coronal fricative [s]. Kaang and Khumi do not have the voiced coronal fricative [z] but have the voiced palatal approximant [j] which the others do not have. All languages have the glottal stop [ʔ]and glottal fricative [h].

The phonemes /tl/ and /t^{h}l/, in Mara, Mizo and Hakha are preserved here as initial consonant clusters because they will be shown in Chapter 4 to be the reflexes of the initial consonant clusters *kr and k^{h}r. On the other hand, *ts and *$tʃ^{h}$ in Mara, Mizo

and Hakha are treated as a single phonemes because they corresponds to /t/ and /s/, respectively in Kaang, Khumi and Tedim.

For final consonants, Mara is different from the other languages, as it does not have closed syllables. The remaining languages have stop and nasal series in finals. Khumi does not have the voiceless labial stop syllable final. Khumi and Kaang do not have liquid finals.

Five cardinal vowels are common in all languages. In addition to cardinal five vowels, Kaang has central vowels: a close central /ɨ/, back central /ʉ/ and open mid central /ə/ vowels. Hakha, Mizo and Tedim have diphthongs (V_1V_2), which may be observed that the first vowel V_1 has no restriction but the second vowel V_2 is restricted to the close front vowel /i/, close back vowel /u/ and open vowel /a/.

The close mid front vowel /e/ is realized as an open mid front vowel [ɛ] in closed syllables. Similarly, the close mid back vowel /o/ is realized as an open mid back vowel [ɔ] in closed syllable. The open front vowel /a/ is slightly different in its realization from [a] to [ɑ]. Vowel length contrast is ignored in this analysis due to the need for acoustic analysis on each language.

A system of three tones is probably the norm for all languages as mentioned by Luce (1985). These tones are rising, mid and falling tone. However, some languages add one or two tones. If a language has four tones, the fourth tone tends to be a low tone and if there are five tones, the fifth tone tends to be a high tone.

CHAPTER 4

RECONSTRUCTION

4.0 Introduction

Chapters 1 to 3 considered background information for Chin languages, the selection of languages used to be representative of Chin languages in the reconstruction of Proto Chin and the description of these languages. This chapter will focus on the reconstruction of Proto Chin.

4.1 General

The primary data for this study is a list of 443 words[19] for each language under study. The wordlist is provided in the appendices. This wordlist covers several semantic domains with linguistic terms appropriate to Southeast Asia. The cognate covers the domains such as nature, plants, food, animals, body parts, human relationships, home, numbers, dimensions, physical descriptions, taste, question words and various verbs.

The data for Kaang, Khumi (Paletwa), Mara, Hakha and Mizo are from unpublished data collected by Ajarn Seung Kim and Ajarn Noel Mann and the author retranscribed. Data for Tedim is based on the author's transcription of his own speech as a native speaker.

Wordlists for these six languages were tabulated for comparison. Possible loan words were eliminated. Loanwords from Old Mon, Karen, Jingphaw were identified on the basis of Luce (1959), Benedict (1972) and Bradley (1978); and loanwords from Burmese and Hindi from the author's own knowledge. Burmese influence is present

[19] The wordlist is developed by the SIL International for Southeast Asia.

in these languages but to a lesser extent than in Plain Chin noted by Stern (1962). Loans from Hindi (or other Indian languages) are mostly found in Mizo due to close contact. For instance, the word for 'candle' (No. 215) in Mizo is identical to the Hindi word [bom˧ba˧tiːˀ˥], while candle in Hakha, Mara and Khumi is the Burmese word [pʰa˧joŋ˧daiŋˊ]. Khumi has the word [saniŋ] for 'year' (No. 018) which seems to be borrowed from Jingphaw [saniŋ] which is also *s-nik in Proto Loloish (Benedict 1972). The Khumi word [panhi] for 'mouth' (No. 130) seems to be borrowed from Old Mon [paːŋ]. According to Luce (1985:85) the word for 'buffalo' (No. 088) is from Karen for the southern languages. 'Buffalo' for Hakha, Mara and Kaang is [na] and in Khumi is [pa˧naːˊ], which appears to be borrowed from the Sgaw Karen word [pənə̤˩]. The transcription is based on Lar Baa (2001:93). Numbers and percentages of identified loan words found in each languages are shown in Table 43. Khumi has 6.32% as the highest and Tedim has 1.13% as the lowest number of loans out of 443 words in the present data.

Language	**Number of loans**	**Percentage**
Tedim	5	1.13%
Mizo	8	1.81%
Mara	9	2.03%
Kaang	12	2.71%
Hakha	14	3.16%
Khumi	28	6.32%

Table 43. Percentage of loan words in Chin languages

Proto Chin is assumed to be monosyllabic and the reconstruction conducted on the basis of root syllables. Peripheral syllables are eliminated. Correspondences in phonemes are compared to establish Proto Chin.

Bradley (1979) says initial consonants, rhymes and tones comprise the three basic systems in comparative analysis for Tibeto-Burman languages. However there is no evidence in the present data that the rhymes must be considered as a unit. Therefore the reconstruction is based on initial consonants, vowel nuclei and codas.

4.2 Initial consonants

Ono (1965) reconstructs the initial consonants of Proto Kuki-Chin and his consonant inventory is shown in Table 44. He claims *g "to be absorbed in some other phonemes" (1965:19).

Ono's Proto-Kuki-Chin initial consonants (1965:19)				
Velar stops	*k	*k^h	*g	
Dental stops	*t	*t^h	*d	
Bilabial stops	*p	*p^h	*b	
Nasals (voiced)	*ŋ	*n	*m	
Nasals (voiceless)	*hŋ	*hn	*hm	
Affricates and Fricatives	*c	*c^h	*s	*z
Semi vowels and Glottals	*w	*j	*h	*ʔ
Liquids	*r	*hr	*l	*hl
Consonant clusters	*kr	*k^hr	*kl	*k^hl

Table 44. Ono's (1965) Proto Kuki-Chin initial consonants

Solnit (1979) attempted to find the possible phonological relationship between Tedim and Mizo (which he calls Lushai) based on the *r. He comes up with some proto segments such as simple initials, initial clusters and finals. Table 45 shows Solnit's (1979:118) simple initials.

	Tedim	Mizo
*g- (or K-N *k-)	k	k
*k- (or K-N *k^h-)	χ	k^h
*r- *g-r-, or *k-r-	g	r

Table 45. Solnit's (1979) simple initial consonants

Table 46 shows Solnit's (1979:118) initial consonant clusters.

	Medial *-r-		Medial *-l-	
Initial	Tedim	Lushai	Tedim	Lushai
*g-	k	tr	k	tl
*k-	χ	t^hr	χ	t^hl
*b-, *p-	$p^{(h)}$	$t^{(h)}$r	$p^{(h)}$	$t^{(h)}$l

Table 46. Solnit's (1979) initial clusters

Table 47 shows Solnit's (1979:119) final consonants.

	Tedim	Lushai
*-k	k	k
*-r	k	r

Table 47. Solnit's (1979) reconstructed final consonants

Bhaskararao (1996) also discussed the initial consonants in Lushai (Mizo) and Tedim. In many cases, he agrees with Ono (1965) however he also mentions some exceptions to Ono's work as shown in Table 48. Many such exceptions are the result of either misspellings or synonyms.

Bhaskararao (1996:28)	
Lushai	Tedim
(T) = *ʈ	k, g, p
(T^{h}) = *ʈ^{h}	k^{h}, p^{h}
(tl) = *tl	t, k, h
(t^{h}l) = *t^{h}l	t, k^{h}, h, b, d, s

Table 48. Bhaskararao's (1996) initial consonants

The summary of previous literature on reconstruction of consonants shows that Proto Chin has voiced, voiceless and aspirated series of stops, except voiced dorsal stop, which is assumed to be absorbed in some other phoneme. There are nasal and liquid series with their respective voiceless counterparts. Proto Chin also has voiceless and voiced alveolar fricative and glottal fricative and voiceless aspirated and unaspirated coronal affricates. There are also semi vowels.

Four consonant clusters can occur. The first consonant of the consonant cluster is restricted to voiceless aspirated and unaspirated alveolar (Solnit adds voiced velar stop) and the second consonant is limited to liquids. Bhaskararao posits voiceless retroflex stop and voiced coronal stop with their aspirated counterpart as the first consonant in consonant clusters. He also discusses proto *r and *k as final consonants.

Having discussed the previous literature, the next consideration is the reconstruction of Proto Chin initial consonants.

The data are taken from the wordlist provided in Appendix A. The left hand column shows the reference number of the word, the second column is the English gloss and the third to the right end are the cognate words in the selected languages.

4.2.1 Stops

The selected correspondence set in Table 49 illustrates the unambiguous initial voiceless labial stop *p in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
050	mushroom	paˊ	paːˊ	pa˧	po˧	pa˥	pa˧
169A	man	pa˧	paˋ	paː˥	po˥	-	pa˧
172	father	paˊ	paːˋ	paːˋ	po˥	pa˧	paːi˧
288	give	piaˊ	peːˋ	peːk˧	pia˥	peːkˊ	pe˧
320	pay	piːaˊ	peːˋ	peːkˋ	pia˧	pei˥	-
346	thin	paˊ	pan˥	panˋ	paː˥	paːˊ	panˊ

Table 49. Proto Chin initial voiceless labial stop *p

The correspondence set in Table 50 shows that Proto Chin has an initial voiceless aspirated labial stop *p^h. This sound is suspect in Mara because it shares only one cognate words out of five in the correspondence set.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
153	thigh	p^heiˋ	-	p^heiˋ	-	p^haːi˧	p^hei˧
192	mat	p^hek˧	p^her˥	p^herˋ	p^hia˧	p^hak˧	p^hak˥
302	bury corpse	p^huːm˧	p^huːmˊ	p^hum˧	-	p^hun˥	-
304	dry something	p^ho˧	p^hoː˥	p^hoːˊ	-	-	p^hoˋ
411B	pangolin	p^huˋ	p^huː˥	p^huː˧	-	p^heiʔ˥	p^huː˧

Table 50. Proto Chin initial voiceless aspirated labial stop *p^h

The correspondence set in Table 51 shows the voiced labial stop *b in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
057A	banana	banꜜ	banꜜ	banꜛ	baːꜛ	-	-
069	cooked rice	buꜛ	-	buꜛ	-	buꜛ	buꜛ
094	bird's nest	buꜗ	buːꜜ	buꜙ	buꜛ	buꜙ	buːꜗ
128	cheek	biaːŋꜛ	biaŋꜙ	biaŋꜜ	baiꜛ	beꜛ	beːŋꜜ
393	tired	-	-	baꜘ	baꜛ	baiꜘ	boŋꜘ

Table 51. Proto Chin initial voiced labial stop *b

The selected data in Table 52 illustrates the voiceless coronal stop *t in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
023	water	tuːiꜗ	tuiꜗ	tiːꜗ	tiꜝ	tuiꜘ	tuiꜜ
049B	bamboo shoot	toːiꜛ	toːiꜛ	toːiꜜ	teꜛ	tuiꜗ	toiꜝ
150B	finger nail	tinꜗ	tinꜗ	tinꜜ	teꜙ	sinꜛ	tinꜛ
196	weave cloth	-	taʔꜙ	taʔꜙ	saꜜ	-	taʔꜙ
342	short length	tomꜗ	toːiꜗ	toːiꜜ	-	toiꜛ	toiꜜ

Table 52. Proto Chin initial voiceless coronal stop *t

The correspondence set in Table 53 exemplifies an unambiguous voiceless aspirated coronal stop *t^h in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
143	liver	t^hinꜜ	t^hinꜛ	t^hinꜜ	t^hiꜛ	t^hinꜛ	t^hinꜘ
162	fat	t^haːuꜜ	t^hauꜜ	t^haːuꜜ	t^hauꜛ	t^hauꜛ	t^haːuꜘ
164	blood	t^hiꜗ	t^hiꜙ	t^hiːꜜ	t^hiːꜝ	t^hiːꜗ	t^hiꜘ
211	firewood	t^hiŋꜗ	t^hiŋꜗ	t^hiŋꜗ	t^heiꜙ	t^hiŋꜛ	t^hiŋꜜ
266	itch	t^hakꜛ	t^hakꜛ	t^hakꜛ	t^haꜛ	t^haːkꜗ	t^hakꜙ
324	three	t^humꜛ	t^humꜗ	t^humꜜ	t^hoꜛ	t^hunꜛ	t^humꜜ
351	deep	t^huːkꜗ	t^huːkꜝ	t^hukꜛ	t^huꜙ	t^hoːkꜙ	t^hukꜗ

Table 53. Proto Chin initial voiceless aspirated alveolar stop *t^h

The data selection in Table 54 illustrates the initial voiced coronal stop *d in Proto Chin. Khumi and Kaang share very few cognate words in the present data. Therefore the initial voiced coronal stop *d is suspect in Khumi and Kaang.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
149B	finger	-	daŋ˥	doŋ˧	do˥	-	-
232	drink	do:n˧	-	din˥	do˧	-	-
272	stand	diŋ˧	diŋ˥	diar˩	dia˧	di:˦	dɯi˦
273B	kneel	din˩	-	-	-	du:˦	doŋ˩
357	straight	-	-	diŋ˧	do˥	-	diŋ˨
400	correct	dik˧	dik˧	-	do˥	-	-

Table 54. Proto Chin initial voiced coronal stop *d

The correspondence set in Table 55 illustrates the unambiguous initial voiceless dorsal stop *k in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
018	year	kum˩	kum˩	kum˩	ko˧	-	kum˨
079B	porcupine	ku˧	ku˧	ku˧	ku˧	-	ku˧
089	horn of buffalo	ki:˨	ki:˩	ki:˧	ki˩	ki˥	ki:˩
313	shoot	ka:p˨	ka:p˩	ka˧	ka˥	ka:˥	ka:p˦
330	nine	kua˨	kua˨	kua˩	ki:˩	ko˥	ko˩
426	bend	ko:i˨	koi˩	ko:i˦	ko˥	kon˨	-

Table 55. Proto Chin initial voiceless dorsal stop *k

The selection of data in Table 56 illustrates the unambiguous initial voiceless aspirated dorsal stop *k^h in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
115	bee	k^ho:i˧	k^ho:i˥	k^ho:i˩	k^hei˧	k^hoi˨	k^ho:i˩
154	knee	k^huk˨	k^hu:p˩	k^huk˧	k^hu˥	k^hu˥	k^hu:k˥
183	village	k^hua˧	k^hua˥	k^hua˩	k^hi:˧	-	k^ho˧
214B	smoke fire	k^hu˨	k^hu:˩	k^hu:˥	k^hu˧	k^hu˥	k^hu:˨
376	bitter	k^ha:˨	k^ha:˩	k^ha:˧	k^ha:˩	k^ha:˥	k^ha˥

Table 56. Proto Chin initial voiceless aspirated dorsal stop *k^h

4.2.2 Nasals

The correspondence set provided in Table 57 illustrates the initial labial nasal *m in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
005	cloud	meːi˧	-	mei˩	mei˧	maːi˩	mei˩
125	eye	mit˧	mit˧	mit˧	-	mek˧	mik˥
171	person	mi˥	mi˧	miː˧	-	miː˥	-
261B	sleep	mu˧	mu˥	-	mo˥	-	-
263	dream	maŋ˩	maŋ˩	maŋ˧	maː˧	maŋ˥	maŋ˧

Table 57. Proto Chin initial labial nasal *m

The selected data in Table 58 shows unambiguously the initial coronal nasal *n in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
170B	woman	nu˧	-	nuː˥	no˥	mi˥	nu˧
173	mother	nu˩	nuː˩˧	nuː˩˧	no˥	nuː˧	noːi˥
264	hurt	naː˧	naː˥	-	-	naː˩	na˧
417A	thou (2s)	naŋ˩	naŋ˩	naŋ˧	na˧	naŋ˥	naŋ˩˧
420A	you (2p)	no˩˧	-	nan˧	na˥	naŋ˧	naŋ˧
440A	yr. bro. of m.	naːu˧	nau˥	nau˧	-	nau˥	nau˨˩

Table 58. Proto Chin initial coronal nasal *n

The selected data in Table 59 shows the initial dorsal nasal *ŋ in Proto Chin. Hakha, Mara and Khumi share only two cognate sets out of five in the data.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
033	silver	ŋuːn˩˧	-	ŋun˩˧	ŋo˩˧	-	ŋui˩˧
251A	think	ŋai˧	ŋai˧	-	-	-	ŋaiʔ˩
255	love	-	ŋai˧	-	-	ŋaːi˥	na˥
326	five	ŋa˧	ŋaː˧	ŋaː˩˧	ŋa˧	ŋaː˧	ŋa˧

Table 59. Proto initial Chin dorsal nasal *ŋ

The data in Table 60 illustrates the initial voiceless labial nasal *m̥ in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
096	feather	mulˊ	m̥ulˊ	m̥ul˧	m̥i˥˩	muiˊ	m̥ui˧
120	face	maiˊ	m̥a:iˊ	m̥a:i˥˩	m̥e˥˩	m̥ai˦	m̥a:i˨˩
182	name	min˧	miŋ˦	min˥˩	mo˧	m̥inˊ	miŋ˥˩
212	fire	meiˊ	meiˊ	mei˥˩	mei˦	m̥aiˀ	mei˥˩
409	ripe	min˧	min˦	m̥in˥˩	m̥a˧	m̥inˊ	m̥in˥˩

Table 60. Proto Chin initial voiceless labial nasal *m̥

Mizo, Hakha, Mara, Khumi and Kaang preserve the *m̥ inconsistently, without a predictable environment, but the voiceless feature has been lost in Tedim.

Rule 1. Voicing (Tedim)

*m̥ > m/$___

The selection of data in Table 61 shows the initial voiceless coronal nasal *n̥ in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
002	sun	ni˧	ni:˦	ni:˥˩	niˊ	n̥i:˦	n̥i˥˩
087	milk	no:iˊ	n̥u˩	n̥uk˩	n̥o˥˩	n̥u˦	-
127	nose	na:k˥˩	n̥ar˦	n̥a:r˥˩	n̥a˩	na˦	n̥a˧
166	pus	na:i˧	n̥a:i˦	n̥a:i˥˩	n̥e˧	n̥a:iˊ	n̥ai˥˩
244	laugh	nu:i˧	nuiˊ	ni:˦	n̥i˩	n̥uiˀ	n̥ui˥˩
323	two	ni˩	n̥i˩	n̥i˩	n̥e˩	-	n̥i˩
344	short height	niamˊ	n̥iamˊ	niam˥˩	n̥aiˀ	n̥enˀ	nem˩

Table 61. Proto Chin initial voiceless coronal nasal *n̥

Mizo, Hakha, Mara, Khumi and Kaang keep the voiceless coronal nasal *n̥ without any predictable condition, but this sound is lost in Tedim.

Rule 2. Voicing (Tedim)

*n̥ > n/$___

The correspondence set in Table 62 illustrates the initial voiceless dorsal nasal is ambiguous. Due to extremely limited data, this segment is not posited as a proto phoneme but will be discussed in section 4.5 under symmetrical considerations.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
101	fish	ŋa˧	n̊a:˩	ŋa:˦	ŋa˥	ŋa:˥	ŋa:˧
253	forget	ŋil˦	n̊il˦	-	-	-	ŋi?˥
257	wait	ŋak˧	n̊a:k˩	n̊a˦	ha:˥	gi:ŋ˧	ŋaŋ˥

Table 62. Chin initial voiceless dorsal nasal /n̊/

All languages have voiced nasal series. Voiceless nasals appear in all languages except Tedim without predictable environment. The occurrences are not consistently corresponds between the languages. Moreover the status of voiceless coronal nasal is impossible to posit as a proto phoneme based on the limited data and needs to be reconsidered under symmetrical considerations.

4.2.3 Trill

The correspondence set in Table 63 shows that Proto Chin has an coronal trill *r which becomes voiced dorsal stop /g/ in Tedim. This phoneme /g/ in Khumi has it's phonetic representation of [ɣ]in two cognates and /r/ in other two cognate sets in the current data.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
048	bamboo	gua˦	rua˦	rua˩	ra˦	ɣu:˧	ro:˩
102	snake	gul˦	ru:l˧	rul˩	ri˦	ɣi˥	ru:i˩
159	bone	gu˦	ru˦	ru˦	ru˦	-	ru˦
299	grind	goi˦	rial˧	rial˧	ria˩	-	re:t˩
327	six	guk˦	ruk˦	ruk˦	ru:˦	ruk˥	ruk˦
328B	seven	gi˦	ri˦	ri?˥	ri˦	ri?˥	ri˦
329	eight	giat˧	riat˩	riat˩	re˩	-	ret˧

Table 63. Proto Chin initial coronal trill *r

There are two sound change rules for this process. The first step is velarization. The coronal trill *r becomes dorsal fricative /ɣ/.

Rule 3. Velarization (Tedim)

*r > ɣ/$___

The next sound change is strengthening. The voiced dorsal fricative /ɣ/ becomes voiced dorsal stop /g/ in Tedim.

Rule 4. Strengthening (Tedim)

*ɣ > g/$___

Thus, the original coronal trill *r appears as voiced dorsal stop /g/ after undergoing Rule 4 and 5. According to Solnit (1979:115) this sound change is "somewhat out of the ordinary". The following tendencies of sound change prove that Rule 5 is a possible process. Solnit (1979:115) says; "There are indications of a velar/uvular point of articulation for *r: its normal reflex in both Karen and Lahu is the dorsal /ɣ/". Luce's (1985) transcription of Tedim (during the Chin Hills linguistic tour of 1954) also shows that nearly all voiced dorsal stops /g/ are allophones of the voiced dorsal fricative /ɣ/ as shown in the following examples: 'six' as [ᵑguk / ɣuk], 'seven' as [s'agiʔ/s'aɣiʔ], 'bone' as [ᵑguʔ/ɣuʔ], snake as [ᵑgul/ɣul]. According to Lehman, (1990:19) native speakers of Mara pronounce their name [maɣa]. Hock and Joseph (1996:259) also say that "/r/ is generally pronounced as a dorsal fricative /ɣ/ in modern standard French." All these evidences support that /g/ in Tedim is the reflex of *r of Chin[20].

Proto Chin possessed a voiceless coronal trill *r̥ as the correspondence set in Table 64 illustrates.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
110	louse head	hik˩	r̥ik˩	r̥ik˩	r̥i˩	hik˥	r̥ik˦
331	ten	-	-	r̥aː˦˥	r̥aː˩	ha˦	r̥a˨
365	green	hiŋ˩	r̥iŋ˦	r̥iŋ˦˥	r̥eo˩	-	-

Table 64. Proto Chin initial voiceless coronal trill *r̥

[20] This initial consonant shift causes great sociolinguistic tendenciy so much so that some Chin political leaders like H. Kam Khen Thang (1986), and S. Prim Vaiphei (1986)-particularly in India- attempted grouping of Chin people based only on this initial consonant as "R-group" and "Non R-group" or "R-group" and "G-group".

This initial consonant coronal trill *r̥ becomes a glottal fricative /h/ in Tedim and Khumi by dropping the coronal trill /r/ feature and keeping the voiceless feature, which appears as the voiceless glottal fricative /h/ in the initial consonant.

Rule 5. Lenition (Khumi and Tedim)
*r̥ > h/$___

4.2.4 Fricatives

Table 65 shows that Mizo, Hakha and Khumi have voiceless labial fricative /f/ in their consonant inventory.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
053	sugarcane	tu˧	fu:˥	fu:˩˧	su˧	sik˧	tu˧
220	spear	tei˧˥	fei˧˥	fei˩˧	sei˥	-	tei˧

Table 65. Chin initial voiceless labial fricative /f/

Two cognate words of the voiceless labial fricative /f/ in Mizo and Hakha have a sound correspondence with voiceless coronal stop /t/ in Tedim, voiceless coronal fricative /s/ in Mara and Kaang and voiceless coronal affricate /ts/ in Khumi. The voiceless labial fricative /f/ in Khumi has no consistent sound correspondence to the other languages. The sound change system looks consistent but due to insufficient cognate sets in the current data no sound change rule can be established at this point. This phoneme will be reconsidered in section 4.5.

The correspondence set in Table 66 illustrates the unambiguous initial voiced labial fricative *v in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
001	sky	va:n˩˧	va:n˩˧	va:n˩˧	va˧	va:n˧˥	-
074	bear	vom˧	vom˥	vom˩˧	vau˧	von˧	vom˩˧
085	pig	vo:k˧	vok˧	vok˧	vo˧	-	vok˥
093	bird	va˥	va˩˧	va:˥	vo˥	va˧	va:˧˥
176	husband	-	-	va:˩˧	va˧	va˧˥	va˧

Table 66. Proto Chin initial voiced labial fricative *v

The correspondence set in Table 67 illustrates that all the languages unambiguously have retained the initial voiceless coronal fricative *s which is not obscure to assign as the proto phoneme.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
122	hair	samˊ	samˊ	samˋ	sa˧	saːnˊ	sam˨
207	mortar	sumˊ	sumˊ	sumˋ	so˧	sun˥	sum˨
208	pestle	suk˨	-	sumˋ	-	-	suk˥
293	launder	soːpˊ	suːˋ	suk˨	so˥	suk˥	-
341	long	saːuˊ	-	sauˋ	-	sau˥	sauˋ
343	tall	saːŋ˧	saːŋ˥	saːŋˋ	sa˧	saŋˊ	-

Table 67. Proto Chin initial voiceless coronal fricative *s

The correspondence set in Table 68 shows that Proto Chin possessed an initial voiced coronal fricative *z.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
056	liquor	zuː˧	zuː˥	zuːˋ	-	-	juˋ
076	monkey	zoːŋ˧	zoːŋ˥	zoːŋˋ	zau˨	-	joːŋˋ
080	rat	zuˊ	zuˋ	zuː˧	zu˥	ju˥	juːˊ
097	fly	zuaŋ˧	-	zuaŋ˥	zo˧	-	joŋˋ
168	urine	zun˨	zunˋ	zunˋ	zo˧	jun˨	juŋ˧
318	sell	zuak˧	zuar˥	zuar˥	zia˨	joːˊ	joiˋ

Table 68. Proto Chin initial voiced alveolar fricative *z

The proto form *z becomes a palatal approximant /j/ before back vowels in Khumi and Kaang.

Rule 6. Palatalization (Kaang and Khumi)
*z > j/$___[Back vowel]

The selection of data in Table 69 illustrates that Proto Chin possessed an initial voiceless glottal fricative *h. However evidence for the proto phoneme is questionable in Khumi because of limited cognate words in the correspondence set.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
040B	tree bark	ho:ŋ˧	-	ho:ŋ˧	hau˩	-	hok˥
059	mango	ha:i˧	ha:i˥	ha:i˩˩	hai˧	-	hai˩˩
133	tooth	ha:˧	ha:˥	ha:˩˩	ha˩	ha˩	-
238	yawn	ha:m˩˩	ham˩˩	ham˩	ha˧	ha:n˩˧	ha:m˥
256	hate	hua˩˧	hua˩˧	huat˩	ho:˥	-	-

Table 69. Proto Chin initial voiceless glottal fricative *h

4.2.5 Affricates

Table 70 shows that Mizo, Hakha and Mara have a voiceless coronal affricate /ts/ in their consonant inventory, which corresponds to a voiceless coronal stop in Tedim, Khumi and Mara.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
071	salt	ti:˩˩	tsi:˩	tsi˧	-	-	ti:˧
113	snail	-	tseŋ˩˩	tsaŋ˧	tsa:˥	ten˥	-
132	saliva	til˧	tsil˥	tsi:l˩˩	tsi˩	-	ti˧
142	lungs	tuap˩˧	tsuap˩˩	tsuap˧	tso˩˩	to:˥	to:p˧
301	dig	to˩˧	tso˩	tsoʔ˩	tso˩	-	to˩˩
415A	earth worm	taŋ˩˧	tsaŋ˥	tsaŋ˩˩	tsa˥	-	taŋ˧

Table 70. Proto Chin initial voiceless coronal affricate *ts

/t/ in the etyma above should be viewed as the reflex of a proto-phoneme *ts, because there is an unambiguous proto phoneme *t throughout the languages under study (cf. Table 52). Therefore, we may posit a rule of deaffrication to account for the /t/ in Kaang, Khumi and Tedim.

Rule 7. Deaffrication (Kaang, Khumi and Tedim)
*ts > t/$___

Table 71 shows that Mizo, Hakha and Mara have voiceless coronal fricative /tʃ^{h}/ in their consonant inventory.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
019A	east	suaʔ˩	tʃʰak˩	tʃʰuaʔ˥	tʃʰi˩	si˩	-
021A	north	sak˩	-	tʃʰak˩	-	si˥	si:p˦
345	thick	sa˩	tʃʰaʔ˩	tʃʰaʔ˥	tʃa˩	sa:˦	sa˥
345	thick	saʔ˩	tʃʰaʔ˩	tʃʰaʔ˥	tʃa˩	sa:˦	sa˥
399	bad	sia˧	tʃʰia˨	tʃʰia˨	tʃʰe:˩	si:˥	se˥
399	bad	sia˧	tʃʰia˨	tʃʰia˨	tʃʰe:˩	si:˥	se˥
412	crested	suaŋ˩	tʃʰuaŋ˥	tʃʰuaŋ˨	tsa˩	-	siŋ˥

Table 71. Proto Chin initial voiceless aspirated coronal affricate *tʃʰ

The proto phoneme is changed to /s/ in Kaang, Khumi and Tedim. /s/ in the etyma above should be viewed as the reflex of a proto-phoneme *tʃʰ, because there is an unambiguous proto phoneme *s throughout the languages under study (cf. Table 67). Therefore, we may posit a rule of spirantization to account for the /s/ in Kaang, Khumi and Tedim.

Rule 8. Spirantization (Kaang, Khumi and Tedim)
*tʃʰ > s/$___

4.2.6 Lateral approximants

The correspondence set in Table 72 unambiguously shows the initial lateral approximant *l in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
119	head	lu:˩	lu:˥	lu:˨	lu:˩	lu:˧	lu˩
131	tongue	le:i˩	lei˥	lei˨	lei˩	lai˩	lei˩
140	navel	la:i˩	la:i˧	la:i˨	le˩	luŋ˥	lai˨
141	heart	luŋ˩	luŋ˥	luŋ˩	lo˥	luŋ˥	luŋ˩
312	dance	la:m˩	la:m˩	la:m˨	la:˩	lan˧	lam˧˥
325	four	li˩	li:˩	li˨	li˩	li˩	li˧˩
432	warm	lu:m˩	lum˥	lum˩	lo:˩	-	-

Table 72. Proto initial Chin lateral approximant *l

The data in Table 73 exemplifies the initial voiceless lateral approximant *l̥ in Proto Chin. The proto voiceless lateral approximant *l̥ becomes a voiced lateral approximant /l/in Tedim.

Rule 9. Voicing (Tedim)
*l̥ > l/$___

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
011	shadow	li:m˥	l̥im˥	-	r̥i˥	-	l̥ip˥
029	stone	luŋ˩	luŋ˩	luŋ˥	lo˥	l̥oŋ˥	luŋ˩
041	thorn	liŋ˩	l̥i:ŋ˥	l̥iŋ˥	l̥eo˩	l̥iŋ˩	l̥iŋ˥
057B	banana	la˩	l̥a:˩	l̥a˩	l̥a˥	-	-
358	far	la˩	l̥a:˥	l̥a:˩	l̥a˩	l̥a˥	-
382	hot	-	lum˥	-	lo˩	-	l̥ok˥
413	water leech	li:t˩	l̥i:t˥	li:t˥	l̥i˥	-	li:t˩

Table 73. Proto initial Chin voiceless lateral approximant *l̥

4.2.7 Initial consonant clusters

The proto initial consonant cluster, composed of voiceless dorsal stop with medial coronal trill *kr is found in Kaang as in the correspondence set shown in Table 74. This sound is doubtful in Khumi for it shares only one cognate word in the current data.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
020A	west	-	t^{h}laŋ˥	tlak˩	tla˩	-	krak˩
226	weep	kap˩	t̪ap˩	t̪ap˩	-	-	krap˥
283	fall	kia˥	tla:˥	tla:˥	tla˩	ka:k˥	krui˩

Table 74. Proto Chin initial consonant cluster *kr

The proto alveolar trill *r as medial in Kaang is lost in Tedim and the voiceless dorsal stop /k/ is retained.

Rule 10. Deletion (Tedim)
*r > ∅/C___

The medial coronal trill *r in Proto Chin is retained in Kaang and becomes the coronal lateral approximant /l/ in Mizo, Hakha, and Mara.

Rule 11. Sporadic (Hakha, Mara and Mizo)
*r > l /C___

The coronal lateral approximant /l/ as a medial affects the initial voiceless dorsal stop /k/ causing it to become a voiceless coronal stop /t/ by place assimilation in Mizo, Hakha and Mara.

Rule 12. Assimilation (Hakha, Mara and Mizo)
*k > t /$_l

The consonant cluster /tl/ is merged into a single consonant and becomes voiceless retroflex stop /ʈ/ in Mizo and Hakha.

Rule 13. Merging (Hakha and Mizo)
*tl > ʈ/$___

The correspondence set for the initial consonant cluster of the aspirated dorsal stop with a medial coronal trill *k^hr is shown in Table 75.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
003	moon	k^ha:˩	t^hla:˩	t^hla˩	t^hla˧	t^hla:˧	k^hra:˥
095	wing	k^ha˩	t^hla:˩	t^hla:˧	t^hlo˧	-	p^hra:˧
121	brain	k^huak˥	t^hluak˩	t^hluak˩	t^hli˧	-	k^hro:k˥
165	sweat	k^ho˥	t^hlan˩	t^hlan˩	t^hlai˧	-	k^hran˥
200	sew	k^hu:i˧	ʈ^{h}ui˧	ʈ^{h}it˧	k^ho˧	k^hok˧	k^hrui˩

Table 75. Proto Chin consonant cluster *k^hr

The process of phonological change is the same as with *kr. Khumi shares only two cognate words out of five, and the sound change is inconsistent. For instance, the word ‘sew’ has initial /k^h/ and the word ‘moon’ has initial /t^hl/. Therefore this phonological change is obscure in Khumi.

The recovery of the proto segments *k^{h}r and *kr is consistent with previous studies. According to Benedict (1972) the word ‘sweat’ in Proto Tibetan is *krwiy, ‘sew’ is *krwi(y), and ‘weep’ is *krap. The exact lexical form appears in Kaang for the verb ‘to weep’. By taking into account these instances, Shafer’s claim about the close relationship between Southern Chin languages and Proto Kuki-Chin is confirmed. As Peiros (1998:180) notes:

> Shafer has investigated the history of Kuki-Chin group and … He has shown that some Southern Kuki-Chin languages maintain Proto Kuki-Chin and possibly Proto Sino-Tibetan prefixes.

4.3 Nucleus

This section considers the reconstruction of Proto Chin vowel nucleus, which can be, analyzed under two subsections: monophthong and diphthong nucleus.

4.3.1 Monophthong vowels

The selection of data in Table 76 shows unambiguous evidence for the close unrounded front vowel *i in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
002	sun	ni˧	niː˥	niːꟾ	niꟾ	n̥iː˥	n̥iꟾ
089	horn (of buffalo)	kiːꟾ	kiːꟾ	kiː˧	kiꟾ	ki˥	kiːꟾ
164	blood	t^{h}iꟾ	t^{h}i˥	t^{h}iːꟾ	t^{h}iːꟾ	t^{h}iːꟾ	t^{h}iꟿ
323	two	niˬ	n̥iˬ	n̥iʔˬ	-	m̥iːˀ	n̥iˬ
325	four	li˧	liː˧	liꟾ	li˧	li˧	liꟿ
013	day	ni˧	niːꟾ	-	-	niːꟾ	n̥iːpꟾ
066B	corn	mim˧	mim˥	-	meiꟾ	-	pɨmꟾ
201	needle	p^{h}im˧	-	t̪^{h}imꟾ	-	-	prɨmꟾ
357	straight	-	ŋil˥	diŋ˧	-	-	diŋꟾ
386	heavy	gikˬ	ritˬ	rit˥	r̥iːˬ	giːtˬ	rɨʔ˥

Table 76. Proto Chin close unrounded front vowel *i

Close unrounded front vowel *i in the nucleus of closed syllables becomes close central vowel /ɨ/ in Kaang.

Rule 14. Fronting or Centralization (Kaang)
*i > ɨ/C___C

The correspondence set in Table 77 shows that Proto Chin unambiguously had the close rounded back vowel *u.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
056	liquor	zuː˧	zuː˥	zuː˩	-	-	ju˩
080	rat	zu˩	zu˩	zuː˧	zu˥	ju˥	juː˩
094	bird's nest	bu˩	buː˩	bu˥	bu˧	bu˥	buː˩
119	head	luː˧	luː˥	luː˩	luː˧	luː˩	lu˧
214B	smoke fire	k^hu˩	k^huː˩	k^huː˥	k^hu˧	k^hu˥	k^huː˩
028	dust	vui˧	vut˩	vut˥	-	-	v̈t˥
096	feather	mul˩	m̥ul˩	m̥ul˧	-	mui˩	m̈i˩
213	ashes	vut˩	-	vut˩	-	p^huː˥	v̈t˥
244	laugh	nuːi˧	nui˩	niː˧	-	n̥ui˥	n̈i˩

Table 77. Proto Chin close rounded back vowel *u

In closed syllables and diphthongs with labiodental and nasal initial consonants as exemplified in the last four words of the table, the close rounded back vowel *u changed to close unrounded central vowel /ʉ̈/ in Kaang.

Rule 15. Fronting or Centralization (Kaang)
*u > ʉ̈/C___C or C___V

The correspondence set of Table 78 illustrates that there was an open vowel *a in Proto Chin open rhymes.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
003	moon	kʰa:˥˩	tʰla:˥˩	tʰla˥˩	tʰla˦	tʰla:˦	kʰra:˧˥
101	fish	ŋa˧˥	ŋ̊a:˥	ŋa:˦	ŋa˥	ŋa:˥	ŋa:˧˥
135	chin	kʰa:˧˥	kʰa˦	kʰa˦	ka˦	-	kʰa˦
326	five	ŋa˦	ŋa:˦	ŋa:˥˩	ŋa˦	ŋa:˦	ŋa˦
376	bitter	kʰa:˧˥	kʰa:˥˩	kʰa:˦	kʰa:˥	kʰa:˥	kʰa˥
257	wait	ŋ̊ak˧˥	ŋ̊a:k˥˩	ŋ̊a˦	ha:˥	-	ŋəŋ˥
334	many	tam˧˥	tam˧˥	tam˥˩	sa˦	-	dəm˥
050	mushroom	pa˧˥	pa:˧˥	pa˦	po˦	pa˥	pa˦
093	bird	va˥	va˥˩	va:˥	vo˥	va˦	va:˧˥
169A	man	pa˩	pa˥˩	pa:˥	po˥	-	pa˦
172	father	pa˧˥	pa:˥˩	pa:˥˩	po˥	pa˦	pa:i˦

Table 78. Proto Chin open vowel *a

Open vowel *a in Proto Chin changed to open mid central vowel /ə/ in Kaang in closed syllables.

Rule 16. Raising or Centralization (Kaang)
*a > ə/C___C

The open vowel *a in open syllables after bilabial stop and bilabial fricative becomes close mid back vowel /o/ in Mara as exemplified in Table 78.

Rule 17. Raising (Mara)
*a > o/C[bilabial]___$

Rules 15, 16 and 17 can be summarized as cardinal vowels become central vowels in diphthongs or closed syllables.

Rule 18. Centralization (Kaang)
*V(Cardinal) > V(Central) /C___C or C___V

The correspondence set in Table 79 illustrates the close mid rounded back vowel /o/ in Proto Chin. Mara has the most shared cognate words. This sound is suspect in Khumi due to limited correspondence words.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
092	elephant tusk	-	ŋ̊o˥	ho˧	no˩	no˩	-
116	fly	tʰo˥	tʰo:˥	tʰo˥	tʰo˩	-	-
142	lungs	-	-	-	tso˥	to:˧	to:p˩
301	dig	to˦	tso˦	tsoʔ˩	tso˩	-	to˥
304	dry something	pʰo˩	pʰo:˧	pʰo:˦	zo:˩	-	pʰo˥
380	dry, to be dry	-	ro:˧	ro˩	tso:˩	-	roŋ˦
394B	blind	to:˥	-	tso˧	tso˩	-	-

Table 79. Proto Chin mid close mid back vowel *o

The correspondence set of Proto Chin *e is provided in Table 80. Most languages retain /e/ as their reflex of Proto Chin *e.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
083	bite	pet˩	se˩	seʔ˩	-	kek˦	-
152	leg	kʰe:˥	ke:˨	ke:˥	-	-	-
288	give	pia˦	pe:˥	pe:k˩	pia˧	pe:k˦	pe˩
320	pay	pi:a˦	pe:˥	pe:k˥	pia˩	pei˧	kʰreŋ˦

Table 80. Proto Chin mid open front vowel *e

In Mara (and in some Tedim cognates), *ediphthongizes, becoming a close unrounded front vowel with open vowel /ia/.

Rule 19. Diphthongization (Mara)
*e > ia/___$

The correspondence set in Table 81 exemplifies unambiguously the diphthong *ei in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
005	cloud	me:i˩	-	mei˥	mei˩	ma:i˦	mei˥
090	tail	mei˦	mei˦	mei˥	m̥ei˩	mai˧	mei˨
131	tongue	le:i˩	lei˧	lei˥	lei˩	lai˩	lei˩
212	fire	mei˦	mei˦	mei˥	mei˧	m̥ai˦	mei˥
416A	I (1s)	kei˦	kei˦	kei˩	kei˩	kai˧	kei˥

Table 81. Proto Chin diphthong *ei

The diphthong *ei became /ai/ in Khumi.

Rule 20. Lowering (Khumi)
*ei > ai /C___ $

Proto Chin possessed the diphthong *ai as the selected data in Table 82 shows.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
120	face	maiˊ	m̥a:iˊ	m̥a:iˋ	m̥eˋ	m̥aiˉ	m̥a:iˋ
140	navel	la:i˧	la:iˊ	la:iˋ	le˧	-	laiˋ
166	pus	na:i˧	n̥a:iˉ	n̥a:iˋ	n̥e˧	n̥a:iˊ	n̥aiˋ
359	near	na:iˊ	n̥a:iˊ	naiʔˉ	n̥eˉ	n̥aiˊ	-

Table 82. Proto Chin diphthong *ai

The proto phoneme *ai coalesces to /e/ in Mara.

Rule 21. Coalescence (Mara)
***ai > e /C___ $**

Table 83 is the correspondence set which shows evidence for the proto phoneme of the diphthong *ui in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
023	water	tu:iˊ	tuiˊ	ti:ˊ	tiˋ	tuiˊ	tuiˋ
098	egg	tu:i˧	tuiˉ	tiˉ	tiˏ	tuiˊ	tui˧
244	laugh	nu:i˧	nuiˊ	ni:˧	n̥iˏ	n̥uiˊ	n̥iˋ

Table 83. Proto Chin diphthong *ui

The proto phoneme *ui is monophthongized to a single close unrounded front vowel in Hakha and Mara.

Rule 22. Fusion (Hakha and Mara)
***ui > i /___ $**

The data in Table 84 shows evidence for the diphthong of close rounded back vowel with open vowel *ua in Proto Chin.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
007	rain	gua˩	rua˩	rua˥	-	kʰoː˧	kʰo˦
019A	east	sua˩	-	tʃʰua?˥	tʃʰi˦	-	-
183	village	kʰua˦	kʰua˥	kʰua˧	kʰiː˩		kʰo˦
234	vomit	lua˧	luak˧	luak˦	li˥	lok˦	lok˦
330	nine	kua˧	kua˧	kua˧	kiː˧	ko˥	ko˧

Table 84. Proto Chin diphthong *ua

The proto phoneme *ua becomes a close unrounded front vowel /i / in Mara.

Rule 23. Fusion (Mara)
*ua > i/C___$

The same proto phoneme *ua becomes a close mid back rounded vowel /o/ in Kaang and Khumi. Khumi shares comparatively few cognate words in the correspondence set.

Rule 24. Coalescence (Kaang and Khumi)
*ua > o /C___$

The selection of correspondence set in Table 85 illustrates that Proto Chin had the diphthong *oi.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
049B	bamboo shoot	toi˦	toi˦	toi˧	-	tui˧	toi˩
115	bee	kʰoːi˦	kʰoːi˥	kʰoːi˧	-	kʰoi˧	kʰoːi˩
342	short length	-	toːi˧	toːi˧	-	toi˦	toi˧
426	bend	koːi˧	koi˧	koːi˦	ko˥	kon˧	
427	lift	toi˦	tsoi˧	tsoi˦	tso˦		-

Table 85. Proto Chin diphthong *oi

Evidence for this phoneme is suspect in Mara due to a scarcity of cognates. The possible sound change is deletion of the close unrounded front vowel /i/.

Rule 25. Monophthongization (Mara)
*oi > o/C___$

Proto Chin had the diphthong *au as shown in Table 86.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
162	fat	tʰa:u˥˩	tʰau˥˩	tʰa:u˥˩	tʰau˧	tʰau˧	tʰa:u˥
341	long	sa:u˥	-	sau˥˩	-	sau˥	sau˥˩
347	fat	tʰau˧	tʰa:u˥	tʰau˥˩	tʰo:˧	-	tʰau˩˧
349	wide/breadth	-	zau˥	kau˥	ko˧	kau˥	kau˩˧
440A	yr. bro. of m	na:u˧	nau˥	nau˧	-	nau˥	nau˩

Table 86. Proto Chin diphthong *au

The proto vowel nucleu *au in Tedim, Mizo, Hakha, Khumi and Kaang corresponds to /o/ in Mara. The possible sound change rule is coalescence.

Rule 26. Coalescence (Mara)
*au > o /C___$

4.3.2 Diphthongs

The diphthong /ia/ in the nucleus position is unambiguous as Table 87 illustrates.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
128	cheek	bia:ŋ˧	biaŋ˥	biaŋ˥˩	bai˧	be˧	be:ŋ˩˧
242	lick	liak˥	liak˩˧	lia?˥˩	lia˥	lek˥	le:k˥
299	grind	-	rial˥	rial˥	ria˩	-	re:t˩˧
329	eight	giat˥	riat˩˧	riat˥˩	re˩˧	-	ret˥
344	short height	niam˥	n̥iam˥	niam˥˩	n̥ai˥	n̥en˥	nem˧
399	bad	sia˥	tʃʰia˥˩	tʃʰia˥˩	tʃʰe:˧	se:˥	tʰe˥

Table 87. Proto Chin diphthong *ia

The proto phoneme is monophthongized to close mid unrounded front vowel /e/ in Khumi and Kaang. Mara shows partial evidence for this change.

Rule 27. Monophthongization (Kaang and Khumi)
*ia > e /C___$

4.4 Codas

The analysis of codas is divided according to different features of the final consonant such as nasal, trill, stop and lateral approximant.

4.4.1 Nasal codas

The cognate set in Table 88 displays the Proto Chin coda *m.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
122	hair	samꜛ	samꜛ	samꜘ	saꜜ	saːnꜗ	samꜜ
184	road/path	lamꜛ	-	lamꜘ	laːꜗ	lanꜜ	lamꜘ
238	yawn	haːmꜘ	hamꜘ	hamꜘ	haꜜ	haːnꜛ	haːmꜗ
312	dance	laːmꜜ	laːmꜜ	laːmꜘ	laːꜜ	lanꜛ	lam꜖
207	mortar	sumꜛ	sumꜛ	sumꜘ	soꜜ	sunꜗ	sumꜜ
302	bury corpse	pʰuːmꜜ	pʰuːmꜛ	pʰumꜜ	boːꜗ	pʰunꜗ	buiꜛ
324	three	tʰumꜜ	tʰumꜛ	tʰumꜘ	tʰoꜜ	tʰunꜜ	tʰumꜘ

Table 88. Proto Chin coda *m

The labial nasal as coda becomes coronal nasal in Khumi.

Rule 28. Alveolarization (Khumi)
*m >n /C___$

The nasal coda is dropped out of Mara.

Rule 29. Deletion (Mara)
*m > ∅ /C___$

It is worth noted that the proto labial nasal *m in coda which is preserved in Tedim, Mizo, Hakha and Kaang becomes an coronal nasal in Khumi. The coronal nasal final syllables have tended to move toward losing their nasal finals with the vowel becoming nasalized as evidence found in Zotung, a Southern Chin language. For instance the word 'forest' in Zotung is /rã/ and 'three' is /tʰũ/ (Kaw Kung p.c. April 1, 2001), (cf. Tedim /gam/ 'forest', /tʰum/ 'three') and true also in Burmese (cf. Mann 1998:38). Mara completely lost either the nasal coda or the nasalized vowel and became an open syllable.

The coronal nasal coda *n is also posited as a proto phoneme, but Mara drops it based on the correspondence set shown in Table 89.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
001	sky	vaːn˥	vaːn˥	vaːn˥	va˩	vaːn˧	-
012	night	zaːn˥	zaːn˥	zan˥	ze˩	-	tʰan˧
057A	banana	ban˥	ban˥	ban˩	baː˩	-	pan˩
143	liver	sin˥	tʰin˩	tʰin˥	tʰi˩	tʰin˩	sin˧
150B	fingernail	tin˧	tin˧	tin˥	te˥	sin˩	tin˩
409	ripe	min˩	min˥	m̥in˥	m̥a˩	m̥in˧	m̥in˥
346	thin	pa˧	pan˥	pan˥	paː˥	paː˧	pan˧

Table 89. Proto Chin coda *n

Rule 30. Deletion (Mara)

*n > ∅/C___$

The dorsal nasal coda *ŋ appears in Proto Chin as illustrated by the correspondence set in Table 90 is dropped out of Mara.

Rule 31. Deletion (Mara)

*ŋ > ∅/C___$

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
263	dream	maŋ˧	maŋ˧	maŋ˩	maː˩	maŋ˥	maŋ˩
029	stone	luŋ˧	luŋ˧	luŋ˥	lo˥	l̥oŋ˥	luŋ˩
141	heart	luŋ˩	luŋ˥	luŋ˩	lo˥	luŋ˥	luŋ˩
038A	tree	tʰiŋ˧	tʰiŋ˧	tʰiŋ˩	tʰo˥	tʰiŋ˥	tʰiŋ˥
211	firewood	tʰiŋ˧	tʰiŋ˧	tʰiŋ˧	tʰei˥	tʰiŋ˩	tʰiŋ˥
076	monkey	zoːŋ˩	zoːŋ˥	zoːŋ˥	zau˩	-	joːŋ˥
417A	thou (2s)	naŋ˧	naŋ˧	naŋ˩	na˩	naŋ˥	naŋ˥

Table 90. Proto Chin coda *ŋ

Rules 29, 30 and 31 can be summarized as Rule 32 shows. Mara deletes the final nasal consonants.

Rule 32. Deletion (Mara)

*N > ∅/___$

4.4.2 Trill coda

Proto Chin had the alveolar trill *r coda as the correspondence set illustrated in Table 91 shows.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
034	iron	tʰik˥	tʰir˥	tʰiar˩	tʰia˥˩	-	tʰi˥˩
099	chicken	ak˩	a:r˩	a:r˥˩	o:˩	a:˥	a:i˥˩
127	nose	na:k˥˩	n̥ar˩	n̥a:r˥˩	n̥a˩	na˩	n̥a˩
318	sell	zuak˩	zuar˩	zuar˩	zia˩	jo:˥	joi˥˩
368	new	tʰa:k˩	tʰar˩	tʰar˥˩	tʰia˩	tʰa˩	tʰai˥˩
375	sour	tʰuk˥	tʰu:r˥	tʰor˥˩	tʰu˩	tʰo:k˥	tʰui˥

Table 91. Proto Chin coda *r

Mizo and Hakha keep the proto phoneme. The others have gone through the phonological changes which also occurred to the initial *r consonant (see section 4.2.3).

The coda *r has the voiceless dorsal stop /k/ reflex in Tedim. For this sound change Tedim undergoes Rules 4 and 5. The voiced dorsal stop /g/ in Tedim becomes the voiceless dorsal stop /k/ through final devoicing.

Rule 33. Devoicing (Tedim)
*g > k/___$

Proto Chin coronal trill *r in syllable final position is lost in Mara, Kaang and Khumi.

Rule 34. Deletion (Kaang, Khumi and Mara)
*r > ∅/___$

4.4.3 Stop codas

Table 92 shows that Proto Chin possessed the voiceless labial stop *p coda. The coda is lost in Mara and Khumi.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
142	lungs	tuap˥	tsuap˥˩	tsuap˩	tso˥˩	to:˩	to:p˩
226	weep	kap˩	ʈap˩	ʈap˩	-	ga˩	krap˩
241	suck	to:p˥	hi:p˥	dop˩	so˩	jo:˥	jo:n˥
313	shoot	ka:p˥	ka:p˥˩	ka˩	ka˩	ka:˩	ka:p˩

Table 92. Proto Chin coda *p

Rule 35. Deletion (Mara and Khumi)

*p > ∅/___$

The cognate set in Table 93 shows that Proto Chin had the voiceless coronal stop *t as one of the codas. Mara and Khumi lost this coda. This sound change rule is suspect in Khumi due to very few cognates in the current data.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
145	hand	kʰut˩	kut˩	kut˥	ku˩	-	kut˥
277	enter	lut˧	lu:t˩	lut˥	-	-	lut˩
329	eight	giat˧	riat˩	riat˨˩	re˩	-	ret˧
413	water leech	li:t˧	l̥i:t˩	li:t˥	l̥i˥	-	li:t˧
414	land leech	vo:t˩	vat˩	vut˩	va˩	va˥	vət˥

Table 93. Proto Chin coda *t

Rule 36. Deletion (Mara and Khumi)

*t > ∅/ ___$

The cognate set in Table 94 illustrates that there was a voiceless dorsal stop *k in Proto Chin as coda but lost in Mara.

Rule 37. Deletion (Mara)

*k > ∅/___$

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
121	brain	kʰuak˧	tʰluak˨˩	tʰluak˨˩	tʰli˥	-	kʰro:k˧
154	knee	kʰuk˧	kʰu:p˩	kʰuk˩	kʰu˥	kʰu˥	kʰu:k˥
266	itch	tʰak˩	tʰak˩	tʰak˩	tʰa˩	tʰa:k˧	tʰak˥
327	six	guk˩	ruk˩	ruk˩	ru:˩	ruk˥	ruk˩
351	deep	tʰu:k˧	tʰu:k˩	tʰuk˩	tʰu˥	tʰo:k˥	tʰuk˧

Table 94. Proto Chin coda *k

Rules 35, 36 and 37 can be summarized as Rule 38. Any stop coda is lost in Mara.

Rule 38. Deletion (Mara)

*S > ∅/___$

4.4.4 Lateral approximant coda

It is unambiguous to posit the lateral approximant *l at the proto Chin coda as the cognate set illustrates in Table 95 shows.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
132	saliva	tilꜜ	tsilˀ	tsi:lꜘ	tsiꜜ	-	tiꜜ
144	intestines	gilꜜ	rilˀ	rilꜘ	riꜜ	giˀ	riꜜ
253	forget	ŋilꜜ	ŋ̊ilꜜ	pʰilꜜ	-	-	n̥iʔˀ
292	wash	silˋ	silˋ	t̥o:lꜜ	si:ˀ	siˀ	-
096	feather	mulˋ	m̥ulˋ	m̥ulꜜ	m̥iꜘ	muiˋ	m̥uiꜜ
102	snake	gulꜜ	ru:lˀ	rulꜘ	riꜜ	giˀ	ru:iꜘ
136	beard	mulˋ	m̥ulˋ	m̥ulꜘ	m̥iꜘ	muiˀ	m̥uiꜜ

Table 95. Proto Chin coda *l

The proto phoneme of lateral approximant *l as coda is lost in Mara, Khumi and Kaang.

Rule 39. Deletion (Mara, Kaang and Khumi)
*l > ∅/___$

4.5 Symmetrical considerations

The consonant and vowel inventories derived in this reconstruction will be analyzed as to whether they are symmetrically distributed or not. This step is important and necessary for a completed phonological reconstruction. The completed phonological reconstruction is expected to be symmetrical because "…crosslinguistically, phonological systems tend toward symmetry" (Hock and Joseph 1996:151).

4.5.1 Consonant inventory

Table 96 is the consonant inventory of Proto Chin based on the reconstruction.

	Labial	**Coronal**	**Dorsal**	**Glottal**
Voiceless stops	*p	*t	*k	/ʔ/
Voiceless aspirated stops	*p^h	*t^h	*k^h	
Voiced stops	*b	*d		
Voiced nasals	*m	*n	*ŋ	
Voiceless nasals	*m̥	*n̥	/ŋ̊/	
Voiced trill		*r		
Voiceless trill		*r̥		
Voiceless alveolar affricate		*ts		
Voiceless aspirated affricate		*$tʃ^h$		
Voiceless fricatives	/f/	*s		*h
Voiced fricatives	*v	*z		
Voiced lateral approximant		*l		
Voiceless lateral approximant		*l̥		

Table 96. Non-symmetrical consonant inventory of Proto Chin

The reconstructed consonant inventory at this point has some asymmetry. One of the asymmetrical problems is the loss of the voiced dorsal stop *g in the voiced stop series as noted by Ono (1965), which still remains an unsolved problem in the scholarship on Chin languages. Secondly, the voiceless labial fricative /f/ is potentially a proto phoneme as the data in Table 58 of section 4.2.4 suggests. Thirdly, due to limited correspondence sets in the data the voiceless dorsal nasal status is also doubtful as shown in Table 55 in section 4.2.2. Therefore the consonant inventory of the reconstruction should be reconsidered.

Cross-linguistic tendencies require that we seek a symmetrical consonant inventory which a reconstruction without *g does not satisfy. Proto Chin *g is not readily reconstructable from the data, but it is possible to trace it considering sound changes in Chin languages. In Tedim, /v/ and /g/ appear in free variation. For instance, the word [vuiˋ] can be pronounced as [guiˋ] in Tedim which means ‘millet plants sprout’ and [vui˧] can be pronounced as [gui˧] which means ‘carry the corpse to the grave, bury.’ According to Bhasakararao (1996:45), [guai˧] in Tedim is [vuai˧] in Mizo meaning ‘wither’ or ‘shrivel’, which are in fact a synonym in Tedim.

Therefore, although the initial reconstruction of proto phoneme *v was unambiguous, additional languages Thawr[21] is added here due to symmetrical reconsiderations. Thawr has the voiced dorsal fricative /ɣ/ which corresponds to the voiced labial fricative /v/ in other Chin languages shown in Table 97.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang	Thawr
001	sky	va꞉n˩	va꞉n˩	va꞉n˩	va˧	va꞉n˨	-	ɣo꞉n˥
024	river	-	-	va˩	va˧	va˧	-	ɣo˩
074	bear	vom˧	vom˥	vom˩	vau˧	von˧	vom˩	ɣom˩
085	pig	vo꞉k˧	vok˧	vok˧	vo˧	o꞉k˥	vok˥	ɣok˧
091	elephant	-	-	vui˩	-	-	vʉi˩	ɣui˩
093	bird	va˥	va˩	va꞉˥	vo˥	va˧	va꞉˨	ɣo˨
176	husband	-	-	va꞉˩	va˧	va˥	va˧	ɣo˩
275	crawl	vak˩	vak˩	-	-	vak˥	-	ɣok˨

Table 97. Proto Chin voiced velar stop *g

From this data, it can be conjectured that the Proto Chin *g was absorbed into the voiceless labial fricative *v which is in free variation with /w/. The first sound change is spirantization. The voiced dorsal stop /g/ becomes the voiced dorsal fricative /ɣ/ as Rule 40 shows.

Rule 40. Spirantization (Hakha, Mara, Mizo, Kaang, Khumi and Tedim)

*g > ɣ/$___

The voiced dorsal fricative /ɣ/ became the voiced labial velar approximant /w/ which is in free variation with the voiced labial fricative /v/ in Chin. The voiced labial fricative has the voiced labial velar approximant realization.

Rule 41. Labiolization (Hakha, Mara, Mizo, Kaang, Khumi and Tedim)

*ɣ > w ~ v /$___

[21] Thawr is a language spoken only in Lamtuk and Ruavan village, Central Chin State; and composed of 110 families and 700-1000 estimated population. (Personal communication with Mang Hmun, a Thawr speaker from Lamtuk village on April 20, 2001.)

This sound correspondence is also reinforced by Benedict's (1972) Sino-Tibetan roots: 'bear' is **k-d-wam*, and 'pig' is **wak*; and Bradley's (1979) Proto-Loloish roots: 'husband' is *(p)wa*, 'pig' is **pwak* and 'bird' is **(b)wa*. On the basis of this evidence, Proto Chin *g corresponds to the labial velar approximant in Sino-Tibetan and Proto-Loloish. Therefore *g will be considered a proto phoneme, with /v/ as a reflect of *g.

Rules 3 and 4 prove the process how dorsal stop /g/ in Tedim is the reflex of the proto coronal trill *r and rule 40 and 41 prove the process how voiced labial fricative /v/ in all language under study is the reflex of the proto dorsal stop *g. Both processes have /ɣ/ as an intermediate step. There is no evident that *g and *r are not in a merger. Therefore it requires how to keep the two sound change processes separate. The possible hypothesis is to prove that the occurrence of the two sound change rules must have been at different time. There are two possibilities as provided in Table 98.

	Proto Chin	**Stage I**	**Stage II**	**Stage III**	**Present**
Possibility I	*ɡ	>ɣ	>w ~ v	>v	>v (All)
	*r		>ɣ	>ɡ	>ɡ (Tedim)
Possibility II	*ɡ		>ɣ	>w ~ v	>v (All)
	*r	>ɣ	>ɡ		>ɡ (Tedim)

Table 98. Sound change process for *r and *g

The possibility I is more likely because possibility II requires the sound change *r > g and *ɣ > g at the same time. It is also noticed that the sound change process *r > ɣ > g/$___ is more recent than the *g > ɣ > w ~ v /$___ based on Luce's (1959) transcription on the Chin Hills linguistic tour in 1954 that the present sound /g/ is transcribed as /ɣ/ consistently.

The second asymmetrical problem is the uncertainty of *f. In section 4.2.4, this phoneme with its possible sound correspondence was briefly discussed based on limited cognate sets. Addition to the current data, Bhaskararao (1996) provides some

consistent sound correspondences between Tedim and Mizo. The immature hypothesis[22] is that the proto phoneme *s still preserves in Mara and Kaang, reflexes /f/ in Hakha and Mizo, /t/ in Tedim and /ts/ in Khumi. The author is not confident to posit due to the absence of its voiced counterpart *v, the existence of the /ts/ and /t/ in the reconstructed phoneme and its limited cognate set in current data. More investigation is required for this phoneme.

Third asymmetrical problem is the suspected voiceless alveolar nasal *n̥ phoneme in Proto Chin. The labial and coronal nasals have their respective voiceless counterparts in Proto Chin (cf. Table 60 and 61). Taking into account the cross-linguistic tendencies of symmetry, it is possible to posit the voiceless velar nasal as a proto phoneme. Based on 4 additional Mizo words from Bhasakararao (1996:127) shown in Table 99, the voiceless velar nasal Mizo consistently corresponds with voiceless alveolar stop in Tedim.

No.	**Gloss**	**Tedim**	**Mizo**
1	wild boar	ŋalʌ	ŋ̊al
2	put down	ŋakɬ	ŋ̊at
3	neck	ŋoŋʌ	ŋ̊oŋ
4	fast	ŋolʌ	ŋ̊ei

Table 99. Tedim /ŋ/ and Mizo /ŋ̊/ of Bhaskararao (1996)

Therefore the voiceless feature becomes voiced in Tedim. It is noted that the status of this phoneme is more tenuous in Southern Chin relatively as there are no correspondences for Mara and Khumi.

Rule 42. Voicing (Tedim)
*ŋ̊ > ŋ/$___

[22] See Appendix H

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
101	fish	ŋa˧	ŋ̊a:˩	ŋa:˧	ŋa˥	ŋa:˥	ŋa:˧
253	forget	ŋil˧	ŋ̊il˧	-	-	-	n̥i?˥
257	wait	ŋak˧	ŋ̊a:k˩	ŋ̊a˧	-	-	ŋaŋ˦

Table 100. Proto Chin voiceless velar nasal *ŋ̊

Rules 1, 2, 9 and 42 can be summarized that the initial voiceless nasal series *N̥ and voiceless liquids in the proto language became voiced in Tedim.

Rule 43. Voicing (Tedim)
*C̥[Sonorants] > C/$___

Based on symmetrical reconsiderations, Table 101 shows the distribution of phonemes in the Proto Chin consonant inventory.

	Labial	Coronal	Dorsal	Glottal
Voiceless stops	*p	*t	*k	[ʔ]
Voiced aspirated stops	*p^h	*t^h	*k^h	
Voiced stops	*b	*d	*g	
Voiced nasals	*m	*n	*ŋ	
Voiceless nasals	*m̥	*n̥	*ŋ̊	
Voiced trill		*r		
Voiceless trill		*r̥		
Voiceless alveolar affricate		*ts		
Voiceless aspirated alveolar affricate		*$tʃ^h$		
Voiceless fricatives		*s		*h
Voiced fricatives		*z		
Voiced lateral approximant		*l		
Voiceless lateral approximant		*l̥		

Table 101. Revised Proto Chin consonant inventory

4.5.2 Vowel inventory

Table 102 is the vowel inventory based on the phonological reconstruction. Five cardinal vowels are symmetrically distributed in the inventory chart from which the modern day reflexes are derived.

	Front	Back
Close	*i	*u
Close mid	*e	*o
Open	*a	

Table 102. Proto Chin vowel inventory

4.6 Tones

The consideration of tone is the most complicated part of this analysis. Luce (1985) comments that the tones or rather the Tone-Patterns are the binding factor which joins Chin languages together from north to south, and from east to west. On the basis of 17 varieties of Chin languages Luce identifies six common tones with each tone number's (shown superscripted) associated tonal description: [1]High Level, [2]High Falling, [3]Mid Rising or Level, [4]Mid Falling, [5]Low Level and [6]Low Falling (but some dialects appear to distinguish only two or three tones; Low Level and Low Falling are rare). From these he identifies five tone patterns. His provisional conclusion of Chin Tone Pattern (1985:83) says:

> (i) Three tones, the origin of Tone-Patterns I, II, and III, were once the norm in Chin languages.
> (ii) Each of the three tones affected open, nasal and *-l/-r* finals.
> (iii) Tone-Pattern I did not admit a final stop- with the exception of certain *-k/-r* finals in the northernmost dialects, where the older final was the *-r,* probably uvular, and not the *-k*.
> (iv) Where Tone Patterns II and III now divide themselves into *a* and *b,* the division is not very ancient nor widespread in Chin, but depended on the original presence or absence of a final stop, stopped finals being confined to II*b* and III*b*.
> (v) The distinction between II*b* and III*b* depended on whether the old medial vowel before the stop was short or long.
> (vi) The presence of a large number of apparently open finals in III*b* (e.g. 'father', 'mother', 'children', 'fish', 'flesh', 'bird', 'breast', 'horns') points to the loss (as an Archiac Chinese) or [SIC] a number of sonant plosives (especially –*g*) after the long vowel.

Luce's conclusions are summarized in Table 103.

	Smooth syllable			Stopped syllable
	Open	**Nasal**	**Liquid**	
Tone Pattern I	yes	yes	yes	no
Tone Pattern IIa	yes	yes	yes	no
Tone Pattern IIb	no	no	no	yes (short medial vowel)
Tone Pattern IIIa	yes	yes	yes	no
Tone Pattern IIIb	no	no	no	yes (long medial vowel)

Table 103. Co-occurrence of Luce's Chin Tone Patterns and syllable types

Luce's data includes the selected languages used in this thesis except Kaang. There are two Khumi varieties, Ahriang and Awa. (The Khumi dialect used in this thesis is Paletwa Khumi.) Luce shows 46 examples of words for Tone Pattern I, 23 words for Tone Pattern IIa, 19 words for Tone Pattern IIb, 26 words for Tone Pattern IIIa and 26 words for Tone Pattern IIIb. The present tonal analysis is based on the words that are found in Luce's data within each pattern. The correspondence of the tone numbers in this data and Luce's data is shown in Table 104. The number after the decimal point refers to a subtype of Luce's tonal categories based on the current data.

Luce No.	**Luce tone**	**Present No.**	**Present symbol**	**Present tone**
1	High Level	1	˥	High Level
2	High falling	2	˥˩	High Falling
		2.5	˥˧˩	Falling
3	Mid Rising/Level	3	˧˥	Mid Rising
		3.2	˩˧	Low rising
		3.5	˧	Level
		3.8	˧˥	Rising
4	Mid falling	4	˧˩	Mid Falling
5	Low Level	5	˩	Low Level
6	Low falling	-	-	-

Table 104. Tone number of Luce data and present data

Tone-Pattern I occurs with smooth syllables[23] and does not in general allow stopped syllables. Tone I occurs in stopped syllables with final /k/ in Tedim but these are a reflex of the *r.

Table 105 shows the 25 words from the current data, which correspond, to Luce's examples. Luce says Tone-Pattern I is high level tone in Tedim and Mizo, low level tone in Hakha, low falling tone in Mara, high falling tone in Ahriang Khumi, high falling and mid falling tone in Awa Khumi.

No.	**Gloss**	**Tedim**		**Mizo**		**Hakha**		**Mara**		**Khumi**		**Kaang**	
037	forest	gam˧	3.5	ram˥	1	ram˩	2.5	ra˧	3.5	-	-	-	-
048	bamboo	gua˧	3.5	rua˧	3.5	rua˩	2.5	ra˧	3.5	gu:˦	3	ro:˩	2.5
053	sugarcane	tu˧	3.5	fu:˥	1	fu:˩	2.5	su˧	3.5	sik˧	3.5	tu˧	3.5
059	mango	ha:i˧	3.5	ha:i˥	1	ha:i˩	2.5	hai˧	3.5	-	-	hai˩	2.5
074	bear	vom˧	3.5	vom˥	1	vom˩	2.5	vau˨	5	von˨	5	vom˩	2
076	monkey	zo:ŋ˧	3.5	zo:ŋ˥	1	zo:ŋ˩	2.5	zau˨	5	-	-	jo:ŋ˩	2
098	egg	tu:i˧	3.5	tui˥	1	ti˥	1	ti˨	5	tui˦	3.8	tui˧	3.5
099	chicken	ak˧	3.5	a:r˥	1	a:r˩	2	o:˧	3.5	a:˦	3.8	a:i˩	2.5
102	snake	gul˧	3.5	ru:l˦	3	rul˩	2.5	ri˨	5	gi˥	1	ru:i˩	2.5
119	head	lu:˧	3.5	lu:˥	1	lu:˩	2.5	lu:˧	3.5	lu:˦	3.8	lu˧	3.5
131	tongue	le:i˧	3.5	lei˥	1	lei˩	2.5	lei˨	5	lai˧	3.5	lei˧	3.5
132	saliva	til˧	3.5	tsil˥	1	tsi:l˩	2.5	tsi˨	5	-	-	ti˧	3.5
133	tooth	ha:˧	3.5	ha:˥	1	ha:˩	2.5	ha˨	5	ha˨	5	-	-
140	navel	la:i˧	3.5	la:i˦	3.8	la:i˩	2.5	le˧	3.5	luŋ˥	1	lai˩	2.5
141	heart	luŋ˧	3.5	luŋ˥	1	luŋ˧	3.5	lo˥	1	luŋ˥	1	luŋ˧	3.5
144	intestines	gil˧	3.5	ril˥	1	ril˩	2.5	ri˨	5	gi˥	1	ri˨	5
182	name	min˧	3.5	miŋ˥	1	min˩	2.5	mo˧	3.5	m̥in˦	3.8	miŋ˩	2
312	dance	la:m˧	3.5	la:m˧	3.5	la:m˩	2.5	la:˧	3.5	lan˦	3.8	lam˩	2
318	sell	zuak˧	3.5	zuar˥	1	zuar˥	1	zia˨	5	jo:˦	3.8	joi˩	2
324	three	t^{h}um˧	3.5	t^{h}um˦	3.8	t^{h}um˩	2.5	t^{h}o˧	3.5	t^{h}un˧	3.5	t^{h}um˩	2.5
325	four	li˧	3.5	li:˧	3.5	li˩	2.5	li˧	3.5	li˧	3.5	li˩	5
326	five	ŋa˧	3.5	ŋa:˧	3.5	ŋa:˩	2.5	ŋa˧	3.5	ŋa:˧	3.5	ŋa˧	3.5
343	tall	sa:ŋ˧	3.5	sa:ŋ˥	1	sa:ŋ˩	2.5	sa˧	3.5	saŋ˦	3.8	-	-
347	fat	t^{h}au˧	3.5	t^{h}a:u˥	1	t^{h}au˩	2.5	t^{h}o:˨	5	t^{h}o˦	3	t^{h}au˩	2
364	red	san˧	3.5	sen˥	1	sen˩	2.5	sai˧	3.5	t^{h}in˦	3	sen˨	5

Table 105. Examples of Tone-Pattern I

[23] I am using Luce's terminology here, smooth syllable means non stopped syllables (i.e. open syllables and those with nasal and liquid finals)

Based on Luce's Pattern I as the proto form, the tonal correspondence within the languages can be seen in Table 106.

	Tedim	**Mizo**	**Hakha**	**Mara**	**Khumi**	**Kaang**
Luce's data	High Level	High Level	Low Level	Low Falling	High Falling/ Mid Falling High Falling	-
Present data	Mid	High Level	Falling	Level Low Level	Rising	Level Falling

Table 106. Luce's tone and the tonal equivalents based
on the current data in Tone-Pattern I

Tone-Pattern IIa occurs in smooth syllables, and not in stopped syllables. According to Luce, the structure of Tone-Pattern IIa is mid falling in Tedim and Mizo, high falling in Hakha, low level in Mara and Ahriang Khumi, and mid falling in Awa Khumi.

The present data has 13 words from Luce's examples as shown in Table 107.

No.	**Gloss**	**Tedim**		**Mizo**		**Hakha**		**Mara**		**Khumi**		**Kaang**	
003	moon	kʰaː꘎	2.5	tʰlaː꘎	2.5	tʰla꘎	2.5	tʰlaꜜ	3.5	tʰlaːꜜ	3.5	kʰraːꘋ	3.8
012	night	zaːn꘎	2.5	zaːn꘎	2.5	zan꘎	2.5	zeꜜ	5	-	-	tʰanꘋ	3
018	year	kum꘎	2.5	kum꘎	2.5	kum꘎	2.5	koꜜ	5	-	-	kumꘋ	3.8
095	wing	kʰa꘎	2.5	tʰlaː꘎	2.5	tʰlaːꘋ	1	tʰloꜜ	3.5	-	-	pʰraːꘋ	3
123	forehead	tal꘎	2.5	tsal꘎	2.5	tsal꘎	2.5	-	-	-	-	taiꜜ	3.5
127	nose	naːk꘎	2.5	n̥arꘋ	1	n̥aːr꘎	2.5	n̥aꜜ	5	naꘋ	1	n̥aꜜ	3.5
143	liver	sin꘎	2.5	tʰinꜜ	5	tʰin꘎	2.5	tʰiꜜ	3.5	tʰinꜜ	3.5	sinꘋ	3
146	elbow	kiu꘎	2.5	kiu꘎	2.5	kiu꘎	2.5	kʰiꜜ	3.5	kʰuꘋ	1	kiːꘋ	3.8
152	leg	kʰeː꘎	2.5	keːꘌ	4	keː꘎	2.5	-	-	kʰoːkꘋ	3.8	kʰoːꘋ	3.8
168	urine	zun꘎	2.5	zun꘎	2.5	zun꘎	2.5	zoꜜ	3.5	junꜜ	5	juŋꜜ	3.5
224	see	mu꘎	2.5	m̥uːꜜ	5	m̥uʔꘋ	1	m̥oꜜ	3.5	-	-	m̥uꘋ	1
250	sing	sa꘎	2.5	-	-	saꘋ	1	saꜜ	3.5	sakꜜ	3.5	-	-
332	hundred	zaː꘎	2.5	zaː꘎	2.5	zaꜜ	3.5	zaꜜ	3.5	-	-	-	-

Table 107. Examples of Tone-Pattern IIa

The tonal correspondence of Chin languages is provided based on Luce's Pattern IIa as the proto form in Table 108.

	Tedim	**Mizo**	**Hakha**	**Mara**	**Khumi**	**Kaang**
Luce's data	Mid Falling	Mid Falling	High Falling	Low Level	Low Level/ Mid Falling	-
Present data	Falling	Falling	Falling	Mid	Mid?	Mid, Rising

Table 108. Luce's tone and the tonal equivalents based on the current data in Tone-Pattern IIa

The Tone-Pattern IIb is restricted to stopped syllables with short medial vowel. The present data has 15 out of 19 the words, which Luce uses as examples, as shown in Table 109.

No.	**Gloss**	**Tedim**		**Mizo**		**Hakha**		**Mara**		**Khumi**		**Kaang**	
007	rain	gua˩	5	ruaʔ˩	5	ruaʔ˥	1	-		-	-	-	-
085	pig	voːk˩	5	vok˩	5	vok˩	5	vo˩	5	oːk˥	3	vok˥	1
125	eye	mit˩	5	mit˩	5	mit˩	5	-	-	mek˩	5	mik˥	1
145	hand	kʰut˩	5	kut˩	5	kut˥	1	ku˩	5	-	-	kut˥	1
147	armpit	zak˩	5	zak˩	5	zak˩	5	-		jak˥	1	-	-
159	bone	gu˩	5	ru˩	5	ru˩	5	ruˊ	3.5	hu˩	5	ru˩	5
226	weep	kap˩	5	t̪ap˩	5	t̪ap˩	5	-	-	gaˊ	3.5	krap˥	1
261A	sleep	iˊ	5	-	-	iˊ	3.5	-	-	i˥	1	ip˥	1
266	itch	tʰak˩	5	tʰak˩	5	tʰak˩	5	tʰaˊ	3.5	tʰaːk˩	3.8	tʰak˥	1
322	one person	kʰat˩	5	kʰat˩	5	kʰat˩	5	kʰaˊ	3.5	-	-	-	-
323	two	ni˩	5	n̥i˩	5	n̥iʔ˩	5	n̥e˩	5	m̥iː˥	3	n̥i˩	5
327	six	guk˩	5	ruk˩	5	ruk˩	5	ruːˊ	3.5	ruk˥	1	ruk˩	5
328B	seven	gi˩	5	ri˩	5	riʔ˥	1	riˊ	3.5	riʔ˥	1	ri˩	5
345	thick	sa˩	5	tʃʰaʔ˩	5	tʃʰaʔ˥	1	tʃa˩	5	tʰaː˥	3	tʰaˊ	1
410	rice seedling	-	5	-	3.5	tsaŋ˩˧	2.5	tsaˊ	3.5	saŋˊ	3.5	taŋ˥	1

Table 109. Examples of Tone-Pattern IIb

The structure of Pattern IIb for Luce is mid falling in Tedim and Mizo, high falling in Hakha, low level in Mara and low level in Ahriang Khumi and mid rising in Awa Khumi. The tone correspondence of Chin languages based on Tone-Pattern IIb can be viewed in Table 110.

	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
Luce's data	Mid Falling	Mid Falling	High Falling	Low Level	Low Level/ Mid Rising	-
Present data	Low Level	Low Level	High Level Low Level	Mid Low Level	High Level Mid Rising	High Level Low Level

Table 110. Luce's tone and the tonal equivalents based on the current data in Tone-Pattern IIb

Tone-Pattern IIIa occurs at smooth syllables. The voiceless velar stop appears as final, as the reflect of *r. The present data has 17 out of the 26 words which Luce uses as examples, as Table 111 shows.

No.	Gloss	Tedim		Mizo		Hakha		Mara		Khumi		Kaang	
023	water	tuːi˥	3.8	tui˥	3.8	tiː˥	3.8	ti˩	2	tui˦	3	tui˩	2.5
026	earth/soil	lei˥	3.8	lei˦	3	lei˩	2.5	lei˩	2.5	-	-	lei˧	3.5
029	stone	luŋ˥	3.8	luŋ˥	3.8	luŋ˩	2.5	lo˦	1	n̥loŋ˦	1	luŋ˨	5
038A	tree	siŋ˥	3.8	tʰiŋ˥	3.8	tʰiŋ˧	3.5	tʰo˦	1	tʰiŋ˦	1	siŋ˩	2.5
081	dog	ui˥	3.8	ui˥	3.8	ui˩	2.5	iː˩	2	ui˦	3	ui˩	2.5
090	tail	mei˥	3.8	mei˥	3.8	mei˩	2	m̥ei˧	3.5	mai˦	1	mei˩	4
096	feather	mul˥	3.8	m̥ul˥	3.8	m̥ul˧	3.5	m̥i˩	2	mui˥	3.8	mɯi˨	5
120	face	mai˥	3.8	m̥aːi˥	3.8	m̥aːi˩	2.5	m̥e˩	2	m̥ai˦	1	m̥aːi˩	4
122	hair	sam˥	3.8	sam˥	3.8	sam˩	2.5	sa˧	3.5	saːn˦	3	sam˨	5
150B	fingernail	tin˥	3.8	tin˥	3.8	tin˩	2.5	te˦	1	sin˧	3.5	tin˨	5
164	blood	tʰi˥	3.8	tʰi˦	1	tʰiː˩	2.5	tʰiː˩	2	tʰiː˥	3.8	sʰi˩	4
184	road/path	lam˥	3.8	-	-	lam˩	2.5	laː˦	1	lan˧	3.5	lam˩	2.5
186	house	in˥	3.8	in˥	3.8	in˩	2.5	oː˦	1	in˥	3.8	im˩	2.5
212	fire	mei˥	3.8	mei˥	3.8	mei˩	2.5	mei˦	1	m̥ai˦	3	mei˩	2.5
317	buy	lei˥	3.8	lei˥	3.8	-	-	lei˦	1	-	-	lei˧	3.5
330	nine	kua˥	3.8	kua˥	3.8	kua˩	2.5	kiː˩	2	ko˦	1	ko˩	2.5
375	sour	tʰuk˥	3.8	tʰuːr˥	3.8	tʰor˩	2.5	tʰu˦	1	tʰoːk˥	3.8	tʰui˥	3.8

Table 111. Examples of Tone-Pattern IIIa

The Tone-Pattern IIIa for Luce is mid rising in Tedim and Mizo, low level in Hakha, high level in Mara and Ahriang Khumi, and high falling in Awa Khumi. The tone correspondence of Chin languages in Pattern IIIa is shown in Table 112.

	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
Luce's data	Mid Rising	Mid Rising	Low Level	High Level	High Level/ High Level, High Falling	-
Present data	Rising	Rising	Falling	High Level High Falling	Mid Rising Rising High Level	Falling Low Level

Table 112. Luce's tone and the tonal equivalents based on the current data in Tone-Pattern IIIa

Tone-Pattern IIIb occurs with stopped syllables, restricted to a long medial vowel before the stop. Luce (1985:83) suggests that many of the open syllables in the Tone-Pattern IIIb category are the result of the loss of final stops, especially –g. The present data has 16 out of the 26 words which Luce uses as examples, as shown in Table 113.

No.	Gloss	Tedim		Mizo		Hakha		Mara		Khumi		Kaang	
089	horn	kiːʌ	3.8	kiːꓥ	2.5	kiːꓤ	3.5	kiꓥ	2	kiꓣ	1	kiːꓥ	2.5
093	bird	vaꓣ	1	vaꓥ	2.5	vaːꓣ	3.5	voꓣ	1	vaꓤ	3.5	vaːʌ	3.8
101	fish	ŋaʌ	3.8	ŋ̊aːꓥ	2.5	ŋaːꓤ	3.5	ŋaꓣ	1	ŋaːꓣ	1	ŋaːʌ	3.8
121	brain	kʰuakʌ	3.8	tʰluakꓥ	2.5	tʰluakꓥ	2.5	tʰliꓣ	1	-	-	kʰroːkʌ	3.8
135	chin	kʰaːʌ	3.8	kʰaꓤ	3.5	kʰaꓤ	3.5	kaꓤ	3.5	-	-	kʰaꓤ	3.5
142	lungs	tuapʌ	3.8	tsuapꓥ	2.5	tsuapꓤ	3.5	tsoꓥ	2	toːꓣ	1	toːpꓤ	3.5
154	knee	kʰukʌ	3.8	kʰuːpꓥ	2.5	kʰukꓤ	5	kʰuꓣ	1	kʰuꓣ	1	kʰuːkꓣ	1
161A	flesh	saꓣ	1	tiːꓥ	2.5	takꓤ	5	saꓤ	3.5	-		-	-
167	excrement	eːkʌ	3.8	eːkꓥ	2.5	eːkꓤ	3.5	eːꓣ	1	iꓤ	5	eːkꓸ	3
172	father	paʌ	3.8	paːꓥ	2.5	paːꓥ	2.5	poꓣ	1	paꓤ	3.5	paːiꓤ	3.5
173	mother	nuʌ	3.8	nuːꓥ	2.5	nuːꓥ	2.5	noꓣ	1	nuːꓤ	3.5	noːiꓣ	1
222	hear	zaʌ	3.8	-	-	tʰeiꓣ	1	tʰeiꓤ	5	tʰaːiʌ	3.8	jaꓣ	1
288	give	piaʌ	3.8	peːꓥ	2.5	peːkꓤ	3.5	piaꓣ	1	peːkꓸ	3	peꓤ	3.5
329	eight	giatʌ	3.8	riatꓥ	2.5	riatꓥ	2.5	reꓥ	2	-	-	retʌ	3.8
376	bitter	kʰaːʌ	3.8	kʰaːꓥ	2.5	kʰaːꓤ	3.5	kʰaːꓥ	2	kʰaːꓣ	1	kʰaꓣ	1
399	bad	siaʌ	3.8	tʃʰiaꓥ	2.5	tʃʰiaꓥ	2.5	tʃʰeːꓤ	3.5	siːꓣ	1	tʰeꓣ	1

Table 113. Examples of Tone-Pattern IIIb

According to Luce's analysis, the structure of Pattern IIIb is mid rising in Tedim, high falling in Mizo, high level in Hakha, Mara and Ahriang Khumi, and high falling in Awa Khumi. The tone correspondence of Chin languages within Tone Pattern IIIb is shown in Table 114.

	Tedim	**Mizo**	**Hakha**	**Mara**	**Khumi**	**Kaang**
Luce's data	Mid Rising	High Falling	High Level	High Level	High Level/ High Falling	-
Present data	Rising	Falling	Mid Falling	High Level High Falling Mid	High Level Mid	High Level Mid Rising

Table 114. Luce's tone and the tonal equivalents based on the current data in Tone-Pattern IIIb

A summary of the tone correspondence for all Tone Patterns in Chin languages based on Luce's Tone Patterns can be seen in Table 115.

Tone Pattern	**Data**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**	**Kaang**
Tone Pattern I	Luce's data	HL	HL	LL	LF	HF/MF,HF	-
	Present data	*M*	*HL*	*F*	*L/LL*	*R*	*M/F*
Tone Pattern IIa	Luce's data	MF	MF	HF	LL	LL/MF	-
	Present data	*F*	*F*	*F*	*M*	*M?*	*M/R*
Tone Pattern IIb	Luce's data	MF	MF	HF	LL	LL/MR	-
	Present data	*LL*	*LL*	*HL/LL*	*M/LL*	*HL/MR*	*HL/LL*
Tone Pattern IIIa	Luce's data	MR	MR	LL	HL	HL/HL,HF	-
	Present data	*R*	*R*	*F*	*HL/HF*	*MR/R./HL*	*F/LL*
Tone Pattern IIIb	Luce's data	MR	HF	HL	HL	HL/HF	-
	Present data	*R*	*F*	*M/F*	*HL/MF/M*	*HL/M*	*HL/M/R*

Table 115. Chin tonal relationship

This analysis shows that there are comparatively clearer tonal correspondences between Tedim, Mizo and Hakha. However, tone in Mara, Khumi and Kaang are split within the Patterns, tremendously complicated and without predictable environments. Thus, while a reconstruction of proto Northern Chin may be proposed from this data, a reconstruction of Proto Chin tone is incomplete and cannot at present be proposed. Therefore this thesis will be limited to a segmental reconstruction for Proto Chin. A Chin tonal analysis is in progress by Dr. Fraser Bennett and Ajarn Noel Mann. Their initial findings seem much closer to Luce's Tonal Patterns.

4.7 Summary

This section summarizes the phonological reconstruction as phonological drift which is divided into three areas of the syllables: the onsets, vowel nuclei and codas. The onset correspondences are shown in Table 116.

Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
*p	p	p	p	p	p	p
*t	t	t	t	t	t	t
*k	k	k	k	k	k	k
*b	b	b	b	b	b	b
*d	d	d	d	d	d	d
*g	v	v	v	v	v	v
*pʰ	pʰ	pʰ	pʰ	pʰ	pʰ	pʰ
*tʰ	tʰ	tʰ	tʰ	tʰ	tʰ	tʰ
*kʰ	kʰ	kʰ	kʰ	kʰ	kʰ	kʰ
*m	m	m	m	m	m	m
*m̥	m	m̥	m̥	m̥	m̥	m̥
*n	n	n	n	n	n	n
*n̥	n	n̥	n̥	n̥	n̥	n̥
*ŋ	ŋ	ŋ	ŋ	ŋ	ŋ	ŋ
*ŋ̊	ŋ	ŋ̊	ŋ̊	-	-	ŋ̊
*r	g	r	r	r	r	r
*r̥	h	r̥	r̥	r̥	h	r̥
*s	s	s	s	s	s	s
*z	z	z	z	z	j	j
*h	h	h	h	h	h	h
*ts	t	ts	ts	ts	t	t
*tʃʰ	s	tʃʰ	tʃʰ	tʃʰ	s	s
*l	l	l	l	l	l	l
*l̥	l	l̥	l̥	l̥	l̥	l̥

Table 116. Chin onset correspondences

All languages discussed in this thesis uniformly have the voiced labial fricative /v/ reflex for the voiced dorsal stop *g. The identification of this reflex solves some of the questions raised by Ono (1965). The proto *r has the reflex /g/ in initial position and /k/ in final position in Tedim and is consistent with the work of Ono (1965), Solnit (1979) and Bhaskararao (1996). Tedim does not have voiceless counterparts for nasals and liquids. Kaang and Khumi do not share the voiced coronal fricative but

have the voiced palatal approximant. Considering the onset correspondences, Tedim is the most innovative with nine reflexes, followed by Khumi six, Kaang four, Mara two and Hakha and Mizo have one reflex each.

The vowel correspondences are shown in Table 117.

Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
*i	i	i	i	i	i	i
*e	e	e	e	e	e	e
*a	a	a	a	a	a	a
*o	o	o	o	o	o	o
*u	u	u	u	u	u	u
*ia	ia	ia	ia	ia	e	e
*ei	ei	ei	ei	ei	ai	ei
*ai	ai	ai	ai	e	ai	ai
*au	au	au	au	au	au	au
*oi	oi	oi	oi	o	oi	oi
*ui	ui	ui	i	i	ui	ui
*ua	ua	ua	ua	i	o	o

Table 117. Chin vowel correspondences

Evidence for reconstructing the simple vowel nuclei shows that Khumi has three reflexes, Mara for four, Kaang for two and Hakha for one. There are significant gaps in diphthongs. Considering vowel correspondences, the Southern languages are more innovative than the Northern languages. Chin coda correspondences are displayed in Table 118.

Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
*m	m	m	m	-	m	m
*n	n	n	n	-	n	n
*ŋ	ŋ	ŋ	ŋ	-	ŋ	ŋ
*r	k	r	r	-	-	-
*p	p	p	p	-	-	p
*t	t	t	t	-	-	t
*k	k	k	k	-	k	k
*l	l	l	l	-	-	-

Table 118. Chin coda correspondences

Tedim, Mizo and Hakha retain the Proto Chin coda except for *r rhyme in Tedim. Mara appears to be the most innovative language and behaves differently from the other Chin languages by dropping all of the codas. Kaang retains Proto Chin nasal codas, but is innovative in the loss of stopped and liquid codas. In Khumi, codas with labial nasal has become coronal nasal. The coda *p and *t are lost in Khumi. Mara, Khumi and Kaang have lost the liquid codas. Therefore the coda correspondences show that Mara is extremely innovative, followed by Khumi and Kaang. Northern languages are relatively conservative when compared to the Southern languages.

CHAPTER 5

PROTO CHIN

5.0 Introduction

This chapter is a description of Proto Chin based on the reconstruction in Chapter 4. The discussion is divided into a general description of the language and a proposal for the language family. The general description of the language is structured as syllable structure, consonants, vowels and segment distribution. Tone is not reconstructed. The stammbaum of the Chin language family is proposed.

5.1 General description of Proto Chin

This section considers the general description of Proto Chin as its syllable structure, consonant inventory, vowels, segment distribution and tones. This reconstruction is assumed to be the picture of Chin languages based on Tedim, Mizo, Hakha, Mara, Khumi and Kaang.

5.1.1 Syllable structure

The syllable canon of Proto Chin can be generalized as $(C_1)(C_2)V_1(V_2)(C_3)T$. The parentheses show optional elements. The optional initial consonant (C_1) can be clustered with the medial (C_2). The nucleus is composed of either a monophthong V_1 or the diphthong $V_1(V_2)$. The final consonant (C_3) is also optional. T represents tone. The potential syllable types are V, VV, VC, CV, CCV, CVC, CVV, CVVC, CCVC, and CCVVC. Examples of different syllable sharps are provided in Table 119.

Ref. No.	English gloss	Proto Chin	Syllable type
437	elder bro. of m	*uː	V:
081	dog	*ui	VV
099	chicken	*aːr	V:C
002	sun	*ni	CV
212	fire	*mei	CVV
266	itch	*t^hak	CVC
003	moon	*k^hraː	CCV:
287	flow	*luaŋ	CVVC
121	brain	*k^hruak	CCVVC
035	mountain	*kraŋ	CCVC

Table 119. Examples of syllable types in Proto Chin

5.1.2 Consonant inventory

Table 120 provides the consonant inventory for Proto Chin which already appeared in Table 101. The consonant inventory is symmetrical. Proto Chin has the voiceless stop series, the voiced stop series and the aspirated voiceless stop series. The liquid series have the voiceless counterparts. The voiced and voiceless features for fricatives are present only for alveolar. There is a voiceless glottal fricative.

	Labial	Coronal	Dorsal	Glottal
Voiceless stops	*p	*t	*k	[*ʔ]
Voiceless Aspirated stops	*p^h	*t^h	*k^h	
Voiced stops	*b	*d	*ɡ	
Voiced Nasals	*m	*n	*ŋ	
Voiceless nasals	*m̥	*n̥	*ŋ̊	
Voiced Trill		*r		
Voiceless trill		*r̥		
Voiceless alveolar affricate		*ts		
Voiceless aspirated alveolar affricate		*tʃ^h		
Voiceless Fricatives		*s		*h
Voiced fricatives		*z		
Voiced Lateral approximant		*l		
Voiceless lateral approximant		*l̥		

Table 120. Proto Chin consonant inventory

5.1.3 Vowels

Proto Chin vowel inventory is shown in Table 121.

	Front	Back
Close	*i	*u
Close mid	*e	*o
Open	*a	

Table 121. Proto Chin vowel inventory

There are five cardinal vowels composed of the close unrounded front vowel, the close rounded back vowel, the close mid unrounded front vowel, the close mid rounded back vowel and the open vowel. They constitute a symmetrical vowel inventory.

5.1.4 Segment distribution

The distribution of Proto Chin segments can be summarized as follows. All consonants can appear in the initial consonant (C_1) position. However, the second consonant (C_2) is limited to /r/. Whenever a consonant cluster occurs, the first consonant is restricted to the voiceless aspirated or unaspirated velar stop. All vowels can appear in V_1 monophthong position, but (V_2) for a diphthong is restricted to either the open vowel /a/, the close unrounded front vowel /i/ or the close rounded back vowel /u/. The distribution of diphthongs is shown in Table 122.

	Front	Back
Close	*ia	*ua *ui
Close mid	*ei *eu	*oi *o
Open	*au *ai	

Table 122. Proto Chin vowel distribution of diphthongs

The final consonant (C_3) in closed syllables is restricted to voiceless stops, nasals, and liquids as shown in Table 123.

	Labial	Coronal	Dorsal	Glottal
Voiceless stops	*p	*t	*k	[ʔ]
Nasals	*m	*n	*ŋ	
Trill		*r		
Lateral approximant		*l		

Table 123. Proto Chin final consonants

5.2 The Chin language family

The subgrouping of Chin languages in previous literature was described in Chapter 2. In Chapter 3, a preliminary subgrouping of Chin languages was also proposed from the lexicostatistic analysis of 100 core words.

This section considers the relationship of Chin languages based on the phonological reconstruction in Chapter 4. The phonological relationships among Chin languages are used as a basis for proposing a subgrouping of these languages.

5.2.1 Shared phonological rules

A Chin Stammbaum can be reconstructed based on shared phonological rules. There are 43 phonological rules identified in this phonological reconstruction. The total shared phonological rules are shown in Table 124.

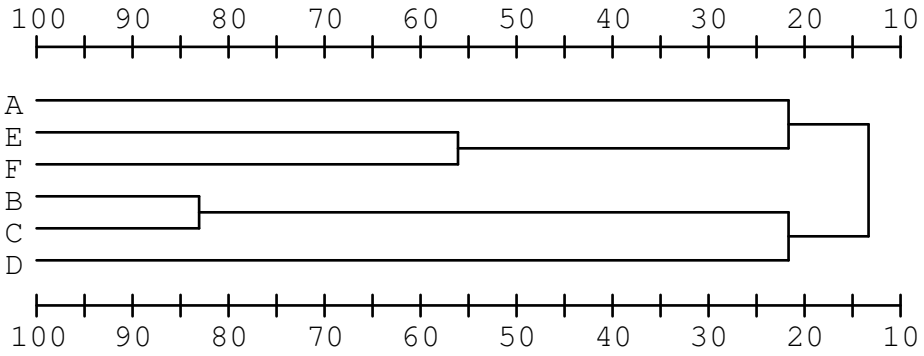
	Hakha	Mizo	Mara	Khumi	Kaang	Tedim
Hakha		5	5	2	2	2
Mizo	5		4	2	2	2
Mara	5	4		6	4	2
Khumi	2	2	6		9	5
Kaang	2	2	4	9		4
Tedim	2	2	2	5	4	

Table 124. Chin shared phonological rules

The Jaccard coefficients is turned into tree as shown in Figure 16 by running the Unweighted Paired Group Method with Arithmetic Average (UPGMA, or average link method)[24] as shown Table 126.

-- Analysis: Average Link -- Correlation (r) = 0.986	
83.0	Mizo, Hakha
56.0	Khumi, Kaang
21.5	Mizo, Hakha, Mara
21.5	Tedim, Khumi, Kaang
13.1	Tedim, Khumi, Kaang, Mizo, Hakha, Mara

Table 125. Average link



[24] This program was run by J. F. Bennett on August 16, 2001

Code	Language	Code	Language
A	Tedim	D	Mara
B	Mizo	E	Khumi
C	Hakha	F	Kaang

Figure 16. Chin language tree based on shared phonological changes

The sound change rules depict the phonological relationship of the Chin languages and trace their decent from the parent language as shown in Figure 17.

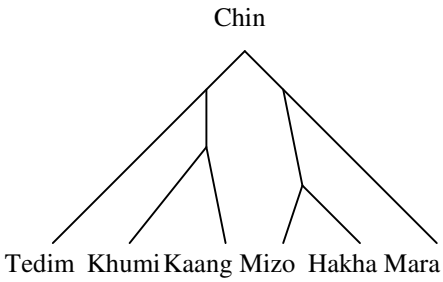


Figure 17. Subgrouping based on shared phonological rules

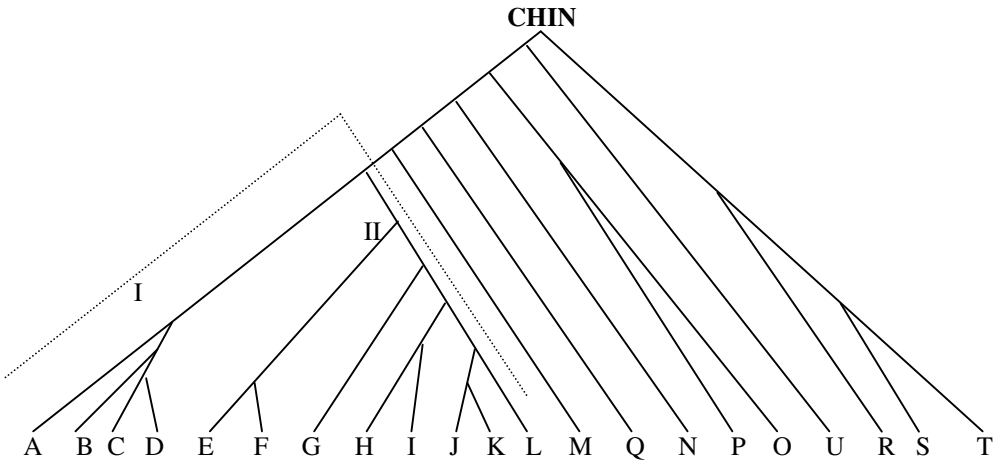
This subgrouping based on shared phonological rules is different from traditional classifications and preliminary subgrouping based on lexicostatistic analysis. Tedim is grouped together with Khumi and Kaang which shows that traditional Northern Chin is phonologically closer to traditional Southern languages than the Central languages. However, it should be noted that the relationship between Tedim and the southern languages of Khumi and Kaang is extremely weak compared to the relationship between Hakha and Mizo, or even between Khumi and Kaang.

It should also be noted that Hakha and Mizo, traditionally Central Chin languages are grouped together with Mara, which is listed under the "Other Chin Groups" by Bradley (1997). Interestingly, Mara is the most innovative and Hakha and Mizo are the most conservative languages phonologically.

5.2.2 Phonological vs lexicostatistic groupings

The preliminary subgrouping based on the lexicostatistic method should be discussed along with the subgrouping based on shared phonological changes.

The exicostatistic subgrouping in Figure 18 (repeated from Figure 15) shows that there are two main Chin language groups: a Northern group (traditionally Central and Northern) and a Southern groups. The Northern languages are closely related each other but the Southern groups are far from the Northern groups and from each other.



Code	Language name	Code	Language name	Code	Language name
A	Thado	H	Falam	O	Kaang
B	Zo	I	Taisun	P	Dai
C	Siyin	J	Hakha	Q	Asho
D	Tedim	K	Thantlang	R	Lautu-Hnaring,
E	Bualkhua	L	Khualsim	S	Lakher
F	Zaniat	M	Senthang	T	Mara
G	Mizo	N	Matu	U	Khumi

Figure 18. Preliminary subgrouping of Chin languages

The northern languages can be subdivided in to two subgroups: I (Thado, Zo, Siyin and Tedim) and II (Bualkhua, Zaniat, Mizo, Falam, Taisun, Hakha, Thangtlang, Senthang and Khualsim). In comparative analysis Tedim represents subgroup I and Hakha and Mizo represent subgroup II.

There can be at least three subgroups among Southern languages such as Lautu-Hnaring, Lakher and Mara (represented by Mara) are in one group, Asho, Matu, Dai and Kaang (represented by Kaang) are in one group and Khumi.

The subgrouping based on shared phonological rules also shows two main Chin language groups. In this grouping, however, Tedim, traditionally a Northern language is grouped together with the traditional Southern languages Khumi and Kaang that is Tedim is closer to the traditional Southern languages interms of its phonological developments than it is to the Central languages. The traditional Central languages are clustered together with Mara. as shown in Figure 19 (repeated from Figure 17).

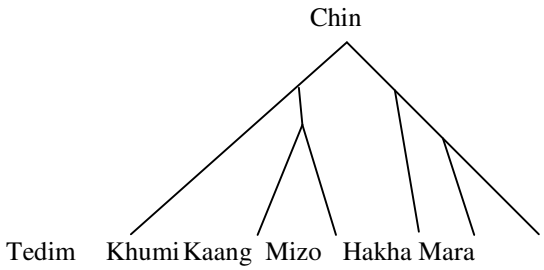


Figure 19. Subgrouping based on shared phonological rules

It should be noted that the relationship between Tedim and the southern languages of Khumi and Kaang is extremely weak compared to the relationship between Hakha and Mizo, or even between Khumi and Kaang. It should also be noted that Hakha and Mizo, traditionally Central Chin languages, are grouped together with Mara, which is listed under “Other Chin Groups” by Bradley (1997). Interestingly, Mara is the most innovative and Hakha and Mizo are the most conservative languages phonologically.

In sum, the lexicostatistic subgrouping and the phonological subgrouping are not entirely congruent. However, they agree in having two Chin language groups which challenges the traditional classification. Hakha and Mizo are in one group in both subgrouping. Khumi and Kaang also remain one group in both subgroupings.

However, there are differences in the components of the groups. Tedim is together with Hakha and Mizo in the lexicostatistic subgrouping, whereas it groups together with Khumi and Kaang in the phonological subgrouping. In the same manner, Mara is together with Khumi and Kaang in the lexicostatistic subgrouping, but it groups together with Mizo and Hakha in the phonological subgrouping.

Therefore it is worth noting that the phonological grouping and lexicostatistic grouping differ at points, although not across the whole family.

5.3 Summary

The Proto Chin consonant inventory is symmetrical. It has voiceless stop, voiced stop and voiceless aspirated stop series. Liquids and nasals have their voiceless counterparts. Voicing contrast for fricatives appear only at the alveolar point of articulation. The vowel inventory is also symmetric with a typical five-vowel system. The syllable can be generalized as $(C_1)(C_2)V_1(V_2)(C_3)T$.

The subgrouping based on this phonological reconstruction challenges the traditional subgrouping. There are only two main groups in the Chin language family with the traditional Northern Chin and Southern Chin groups placed together in one group. This is similar to Peterson's (2000) proposed division of Chin languages with "Central" and "Peripheral" groups. In addition, the traditional Central Chin group is merged with Mara, which Bradley classifies among "Other Chin Groups".

CHAPTER 6

CONCLUSION

This chapter provides a summary of the conclusions in this thesis. Each chapter is briefly summarized.

Chapter 1 introduced the Chin people, the languages and methods of investigation in this thesis. The Chin people are originally from the Yellow river or Manchu river valley of Southwest China and currently live in adjacent to the border of Myanmar, India and Bangladesh. The date of their arrival to the present region is estimated not earlier than the 13th century AD. There are possibly as many as 54 Chin languages spoken in Chin State. Most linguists consider Chin languages to be in three groups: Northern, Central and Southern Chin.

Chapter 2 involves about the selection of representative languages. Lexicostatistic methods are applied to twenty-one different Chin languages. Based on the lexicostatistic analysis, a preliminary subgrouping is proposed as shown in Table 128.

Preliminary Subgrouping of Chin languages				
A		**B**		
I	**II**	**III**	**IV**	**V**
A. Thado	E. Bualkhua	N. Matu	R. Lautu	**U. Khumi**
B. Zo	F. Zaniat	**O. Kaang**	S. Lakher	
C. Siyin	**G. Mizo**	P. Dai	**T. Mara**	
D. Tedim	H. Falam	Q. Asho		
	I. Taisun			
	J. Hakha			
	K.Thantlang			
	L. Khualsim			
	M. Senthang			

Table 126. Selected Chin languages

There are five subgroups of Chin languages. Representative languages are selected from each subgroup. Mizo and Hakha are selected from subgroup II. Thus, there are

six selected languages: Tedim, Mizo, Hakha, Mara, Khumi, and Kaang. Tedim represents group I, Mizo and Hakha represent group II, Kaang represents group III, Mara represents group IV and Khumi represents group V.

Chapter 3 presents an overview of the six selected languages based on syllable canon, consonant inventory, vowel inventory, segment distribution and tones. Regarding initial consonants, all languages share the voiceless aspirated and unaspirated stop series. Khumi and Tedim have the voiced dosal stops whereas the other Chin languages do not. Tedim does not have the voiceless nasal series and coronal trill while the other Chin languages have voiceless and voiced sets. Mizo, Hakha and Mara have two affricates. Only Mizo, Hakha and Khumi have voiceless labial fricatives. Tedim does not have the voiceless lateral approximant while the other languages have voiced and voiceless lateral approximants. All languages share the voiced labial fricative and voiceless coronal fricative. Kaang and Khumi do not have the voiced coronal fricative but have the voiced palatal approximant which the other do not have. All languages have the glottal stop and glottal fricative.

For final consonants, Mara is different from the other languages as it does not have closed syllables. The remaining languages have stop and nasal series in finals. Khumi does not have the voiceless labial stop syllable final. Khumi and Kaang do not have liquid finals.

Five cardinal vowels are common in all languages. In addition, Kaang vowels tend to be central while Hakha, Mizo and Tedim mostly have diphthongs. Mizo and Hakha.

Chapter 4 provided the phonological reconstruction. This chapter solves the longstanding problem of the proto *g in Chin reconstruction. Arguments from symmetry are used to reconstruct more marginal elements in the data. It is noted that while there are some relationships between tonal correspondence in Tedim, Mizo and

Hakha, however there are no consistent correspondences in Mara, Kaang and Khumi. Thus, tone is not included in this reconstruction.

Chapter 5 described the Proto Chin and proposed the subgrouping. The Proto Chin consonant inventory is symmetrical. It has voiceless stop, voiced stop and voiceless aspirated stop series. Liquids and nasals have their voiceless counterparts. Voicing contrast for fricatives appears only at the coronal point of articulation. The vowel inventory is also symmetric with a typical five-vowel system. The syllable can be generalized as $(C_1)(C_2)V_1(V_2)(C_3)T$.

The subgrouping based on this phonological reconstruction as shown in Figure 20 challenges the traditional subgrouping.

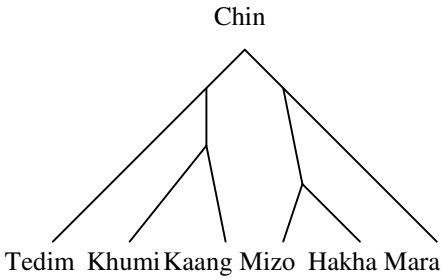


Figure 20. Subgrouping based on shared phonological rules

This subgrouping is different from traditional classifications and the preliminary subgrouping based on lexicostatistic analysis. Tedim is grouped together with Khumi and Kaang which shows that the traditional Northern Chin group is phonologically closer to the traditional Southern languages than are the Central languages. Again, Hakha and Mizo (traditional Central languages) are grouped together with Mara which is listed as "Other Chin Groups" by Bradley (1997). Mara is the most innovative and Hakha and Mizo are the most conservative languages phonologically.

There are only two main groups in Chin language family with the traditional Northern Chin and Southern Chin groups placed together in one group. This is similar to

Peterson's (2000) proposed division of Chin languages with "Central" and "Peripheral" groups. In addition, the traditional Central Chin group is merged with Mara, which Bradley classifies among "Other Chin Groups".

The unfinished tonal analysis shows a clearer predictable tonal correspondence among the northern Chin languages (Mizo, Hakha and Tedim), but the tonal correspondences among the Southern Chin languages are more unpredictable. Therefore, if the tonal reconstruction is considered as criterion for subgrouping the Chin languages examined here, the two main divisions will likely remain the same, but the affiliation of Tedim will likely shift to the northern Chin group. Tedim has a very weak relationship with the southern languages based on shared phonological innovation, and the inclusion of tonal development is likely to shift the balance toward the northern languages. The northern and southern division is also consistent with Lehman's (1963) division of northern and southern Chin groups based on socio-cultural phenomena.

The thesis provides a thorough reconstruction of Chin languages based on phonological segmental aspects. The reconstruction could contribute a solution for recovering the longstanding unsolved problem of *g. It also identifies some key problems involved in tone.

APPENDIX A

RECONSTRUCTED SYLLABLES

Based on phonological changes discussed in Chapter 4, the reconstructed roots are provided syllable by syllable. Proto Chin is primarily monosyllabic, but there are some words that are disyllabic. For instance the word for 'sea' is [tuːiˀ.piˀ], which is the combination of [tuːiˀ] 'water' and [piˀ] 'big, large or mother'. The letter 'A' attached to a reference number indicates the initial syllable, and the letter 'B' the second syllable of a reconstructed compound word. In cases where there is some uncertainty as to the reconstruction either based on the cognates or variation in the cognates, the reconstructed form is shown in {braces}. Wherever the reconstruction is impossible due to loan or ambiguity in the correspondences, there is no entry. In cases where the vowel quality is uncertain, the vowel is indicated by /V/. Likewise, where a consonant cannot be differentiated, it is represented by /C/. When a nasal consonant phoneme is not clear, it is shown by /N/. The left hand column shows the reference number and gloss for the word followed by the reconstructed form while the other columns show data from representative languages. Tone is omitted in the reconstructed syllables.

No.	Gloss	Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
001	sky	*gaːn	vaːn˥˩	vaːn˥˩	vaːn˥˩	va˧˥	vaːn˦˥	-
002	sun	*ni	ni˧˥	niː˥	niː˥˩	ni˦˥	n̥iː˥	n̥i˥˩
003	moon	*kʰraː	kʰaː˥˩	tʰlaː˥˩	tʰla˥˩	tʰla˧˥	tʰlaː˧˥	kʰraː˦˥
004A	star	*ar	ak˧˥	ar˥	ar˧˥	oː˧˥	a˧˥	ai˦˥
004B	star	*si	si˥˩	si˥˩	fiː˧˥	si˦˥	siː˥	si˥˩
005	cloud	*mei	meːi˧˥	-	mei˥˩	mei˧˥	maːi˦˥	mei˥˩
007	rain	*rua	gua˧˥	rua˧˥	rua˥	-	-	-
010	thunder	*kʰo	-	kʰo˥	kʰua˧˥	ka˧˥	-	kʰo˧˥
011	shadow	*l̥im	liːm˥˩	l̥im˥˩	-	r̥i˥	-	l̥ip˥
012	night	*zan	zaːn˥˩	zaːn˥˩	zan˥˩	ze˧˥	-	tʰan˦˥
013	day	*ni	ni˧˥	niː˦˥	-	-	niː˦˥	n̥iːp˦˥
014	morning	*ziŋ	ziːŋ˧˥	ziŋ˦˥	ziŋ˧˥	-	-	-
015	noon	*tʃʰun	suːn˥˩	tʃʰun˥˩	tʃʰun˥˩	tʃʰoʔ˧˥	-	-
016A	yesterday	*zaː	zaː˧˥	-	zan˥	zaː˧˥	zaŋ˧˥	jan˦˥
016B	yesterday	*ni	ni˧˥	ni˧˥	niː˧˥	ne˧˥	-	-
018	year	*kum	kum˥˩	kum˥˩	kum˥˩	ko˧˥	-	kum˦˥
019A	east	*tʃʰua	suaʔ˧˥	tʃʰak˧˥	tʃʰuaʔ˥	tʃʰi˧˥	si˧˥	-
019B	east	*lam	lam˦˥	lam˦˥	lei˧˥	-	-	lam˨˩
020A	west	*krak	-	tʰlaŋ˦˥	tlak˧˥	tla˧˥	-	krak˦˥
020B	west	*lam	lam˦˥	lam˦˥	lei˧˥	-	-	lam˨˩
021A	north	*tʃʰak	sak˧˥	-	tʃʰak˧˥	-	si˥	si:p˦˥
021B	north	*lam	lam˦˥	lam˦˥	lei˧˥	-	-	lam˨˩
022A	south	*kʰraŋ	kʰaŋ˧˥	-	tʰlaŋ˧˥	tʃʰe˧˥	-	tum˧˥
022B	south	*lam	lam˦˥	lam˦˥	lei˧˥	-	-	lam˨˩
023	water	*tui	tui˦˥	tui˦˥	tiː˦˥	ti˩˩	tui˦˥	tui˥˩
025A	sea	*tui	tui˦˥	tui˥	ti˧˥	-	-	tui˧˥
025B	sea	*pi	pi˦˥	-	-	pi˨˩	-	pʉi˦˥
026	earth soil	*lei	lei˦˥	lei˦˥	lei˥˩	lei˥˩	-	lei˧˥
028	dust	*gui	vui˧˥	vut˧˥	vut˥	-	-	vʉt˥
029	stone	*luŋ	luŋ˦˥	luŋ˦˥	luŋ˥˩	lo˥	n̥loŋ˥	luŋ˧˥
030	sand	*{seː}	se˧˥	-	seː˧˥	sa˧˥	si˧˥	-
033	silver	*ŋuːn	ŋuːn˥˩	-	ŋun˥˩	ŋo˥˩	-	ŋui˥˩
034	iron	*tʰir	sik˦˥	tʰir˦˥	tʰiar˧˥	tʰia˥˩	suːn˦˥	si˥˩
035	mountain	*kraŋ	-	tlaːŋ˥	tlaŋ˥˩	tlaː˥˩	-	-
036	cave	*kʰul	kʰuːl˧˥	-	kua˧˥	kʰo˥˩	-	kʰui˧˥
037	forest	*ram	gam˧˥	ram˥	ram˥˩	ra˧˥	-	-
038A	tree	*tʰiŋ	tʰiŋ˦˥	tʰiŋ˦˥	tʰiŋ˧˥	tʰo˥	tʰiŋ˥	tʰiŋ˥˩
038B	tree	*kuŋ	kuŋ˦˥	kuŋ˥˩	kuŋ˦˥	ko˥	kuŋ˥	-
039A	branch	*tʰiŋ	tʰiŋ˦˥	tʰiŋ˦˥	tʰiŋ˧˥	tʰo˥	tʰiŋ˥	tʰiŋ˧˥
039B	branch	*{Ce}	-	-	ŋeː˧˥	tse˧˥	beŋ˦˥	-
040A	tree bark	*tʰiŋ	tʰiŋ˦˥	tʰiŋ˦˥	tʰiŋ˧˥	tʰo˥	tʰiŋ˥	tʰiŋ˧˥
040B	tree bark	*hoːŋ	hoːŋ˧˥	-	hoːŋ˧˥	hau˧˥	-	hok˥
No.	**Gloss**	**Proto Chin**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**	**Kaang**

041	thorn	*l̥iŋ	liŋ˧	l̥iːŋ˥	l̥iŋ˥˩	l̥eo˧	l̥iŋ˦	l̥iŋ˥˩
043A	leaf	*tʰiŋ	tʰiŋ˦	tʰiŋ˦	tʰiŋ˧	-	tʰiŋ˥	tʰiŋ˧
043B	leaf	*n̥a	naʔ˧/teʔ˧	n̥a˧	n̥a˥	n̥a˧	-	n̥aʔ˥
044A	flower	*paŋ	-	paŋ˧	paŋ˧	poː˧	pao˥	-
044B	flower	*par	pak˧	par˥	par˥	-	-	-
045	fruit	*tʰei	-	tʰeːi˦	tʰei˧	tʰei˧	tʰaːi˥	tʰei˥
048	bamboo	*rua	gua˧	rua˧	rua˥˩	ra˧	guː˥	roː˥˩
049A	bamboo shoot	*rua	go˧	ro˧	rua˥˩	ra˧	-	roː˧
049B	bamboo shoot	*toi	toi˧	toi˧	toi˥˩	te˧	tui˦	toi˥˩
050	mushroom	*pa	pa˦	paː˦	pa˧	po˧	pa˥	pa˧
051	rattan	*r̥ui	-	r̥ui˥	r̥i˧	ri˥	gui˥	rui˧
052	kapok	*paŋ	paŋ˧	paːŋ˥	-	pʰa˥	-	paŋ˥
053	sugarcane	*su	tu˧	fuː˥	fuː˥˩	su˧	sik˧	tu˧
056	liquor	*zuː	zuː˧	zuː˥	zuː˥˩	-	-	ju˥˩
057A	banana	*ban	ban˥˩	ban˥˩	ban˧	baː˧	-	pan˧
057B	banana	*l̥aː	la˦	l̥aː˦	l̥a˧	l̥a˥	-	-
059	mango	*haːi	haːi˧	haːi˥	haːi˥˩	hai˧	-	hai˥˩
062A	eggplant	*bok	bok˨	bok˨	bon˧	-	-	bu˧
062B	eggplant	*boːn	boːn˥˩	boːn˩	bok˥	-	-	bun˥
064	ginger	*tʰiːŋ	tʰiːŋ˧	tʰiŋ˥	tʰiŋ˨	sei˨	tʰiŋ˦	tʰiːŋ˥˩
066A	corn	*gai	vai˧	vai˥	voi˥	-	-	va˧
066B	corn	*mim	mim˧	mim˥	-	mei˥˩	-	-
067A	red pepper	*{mal}	-	mar˥	m̥an˧	-	mai˥	-
067B	red pepper	*{Caː}	za˨	tsaː˥˩	-	-	-	-
068	paddy rice	*sa	-	-	fa˧	saː˩	saŋ˧	saː˩
069	cooked rice	*bu	buʔ˨	-	buʔ˨	-	bu˨	bu˧
070	pounded rice	*tsaŋ	taŋ˦	faːi˥	tsaŋ˥˩	tsa˧	tsaŋ˥	tsaŋ˥˩
071	salt	*tsiː	tiː˥˩	tsiː˩	tsi˧	-	-	tiː˧
072A	animal	*ram	gam˧	ram˥	ram˥˩	raː˧	-	-
072B	animal	*saː	saː˥	saː˧	sa˧	sa˨	-	saː˦
073A	tiger	*sa	sa˥	sa˨	-	tsa˧	ta˧	sa˧
073B	tiger	*kei	-	kei˥	-	kei˧	kai˦	-
074	bear	*gom	vom˧	vom˥	vom˥˩	vau˨	von˨	vom˥˩
075A	deer	*sa	sa˥	sa˨	sa˥	-	sa˥	-
075B	deer	*zuk	zuk˥˩	-	-	zu˧	suk˨	-
076	monkey	*zoːŋ	zoːŋ˧	zoːŋ˥	zoːŋ˥˩	zau˨	-	joːŋ˥˩
077	gibbon	*{hu}	-	hau˥˩	hu˧	tu˧	ha˥	vɯk˥˩
078A	rabbit	*sa	-	sa˨	sa˧	sa˧	-	-
078B	rabbit	*{ge}	-	bek˨	veʔ˨	ve˧	-	viː˥˩
079A	porcupine	*sa	sa˥	sa˨	sa˧	so˧	si˥	sa˥
079B	porcupine	*ku	ku˨	ku˨	ku˨	ku˧	-	ku˨
080	rat	*zu	zu˦	zu˥˩	zuː˧	zu˥	ju˥	juː˦
081	dog	*ui	ui˦	ui˦	ui˥˩	iː˥˩	ui˥	ui˥˩

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082	bark	*nak	nak˥	-	-	-	n̥ak˩	nat˩
084A	cat	*zo	zo˩	zo˩	zoʔ˩	zo:˩	-	-
084B	cat	*{CV}	ŋeu˥	te˥	-	ka˩	-	-
085	pig	*gok	vo:k˩	vok˩	vok˩	vo˩	o:k˩˥	vok˩
087	milk	*n̥u	no:i˥	n̥u˩	n̥uk˩	n̥o˥	n̥u˩	-
089	horn of buffalo	*ki:	ki:˥	ki:˧	ki:˩	ki˥	ki˩	ki:˧
090	tail	*mei	mei˥	mei˥	mei˥	m̥ei˩	mai˩	mei˨
091	elephant	*sa:i	sa:i˩	sa:i˩	vui˧	se:˩	sai˥	vui˥
092	elephant tusk	*{ŋ̊o}	-	ŋ̊o˧	hou˩	no˩	not˩	-
093	bird	*ga	va˩	va˧	va:˩	vo˩	va˩	va:˥
094	bird's nest	*bu	bu˥	bu:˧	bu˩	bu˩	bu˩	bu:˥
095	wing	*k^{h}ra	k^{h}a˧	t^{h}la:˧	t^{h}la:˩	t^{h}lo˩	-	p^{h}ra:˩
096	feather	*m̥ul	mul˥	m̥ul˥	m̥ul˩	m̥i˥	mui˥	mʉi˩
097	fly	*zuaŋ	zuaŋ˩/le:ŋ˩	-	zuaŋ˩	zo˩	-	joŋ˥
098	egg	*tui	tu:i˩	tui˩	ti˩	ti˩	tui˥	tui˩
099	chicken	*a:r	ak˩	a:r˩	a:r˥	o:˩	a:˥	a:i˧
101	fish	*ŋa	ŋa˥	ŋ̊a:˧	ŋa:˩	ŋa˩	ŋa:˩	ŋa:˥
102	snake	*rul	gul˩	ru:l˩	rul˧	ri˩	gi˩	ru:i˧
104A	turtle	*sum	sum˩	sa˩	tʃ^{h}uŋ˩	so˩	-	sum˩
104B	turtle	*k^{h}ok	kuaŋ˩	-	ku˩	kei˩	gu:˩	k^{h}op˩
106	frog	*u	ui˥	ut˩	u˩	u˩	ui˩	u˩
107	insect	*luŋ	luŋ˥	-	ruŋ˩	lo˩	luŋ˩	-
108	spider	*mom	mom˥	mom˧	-	-	pum˩	vom˨
109A	spider web	*mom	mom˥	mom˧	-	-	pum˩	vom˨
109B	spider web	*bu	-	-	bu˩	bu˩	bu˩	-
110	louse head	*r̥ik	hik˩	r̥ik˩	r̥ik˩	r̥i˩	hik˥	r̥ik˩
111	termite	*lei	lei˥	-	-	lei˩	-	lei˨
113	snail	*tseŋ	-	tseŋ˧	tsaŋ˩	tsa:˩	ten˩	-
114	mosquito	*ka:ŋ	ka:ŋ˥	ka:ŋ˩	-	-	kaŋ˩	-
115	bee	*k^{h}o:i	k^{h}o:i˩	k^{h}o:i˩	k^{h}o:i˧	k^{h}ei˩	k^{h}oi˥	k^{h}o:i˧
116	fly	*t^{h}o	t^{h}o˧	t^{h}o:˧	t^{h}au˧	t^{h}o˩	-	-
117A	butterfly	*pa	-	p^{h}e˩	pa˩	ba˩	p^{h}o˩	pe˩
117B	butterfly	*lep	-	lep˩	lep˩	lie˩	l̥e:˩	lem˩
119	head	*lu:	lu:˩	lu:˩	lu:˧	lu:˩	lu:˥	lu˩
120	face	*mai	mai˥	m̥a:i˥	m̥a:i˧	m̥e˥	m̥ai˩	m̥a:i˨
121	brain	*k^{h}ruak	k^{h}uak˥	t^{h}luak˧	t^{h}luak˧	t^{h}li˩	-	k^{h}ro:k˥
122	hair	*sam	sam˥	sam˥	sam˧	sa˩	sa:n˩	sam˩
123	forehead	*tsal	tal˧	tsal˧	tsal˧	-	-	tai˩
124A	eyebrow	*mik	mit˩	mit˩	mit˩	-	-	mik˩
124B	eyebrow	*k^{h}u	k^{h}u˧	ko:˩	-	-	k^{h}ʉ:n˩	-
125	eye	*mik	mit˩	mit˩	mit˩	-	mek˩	mik˩
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127	nose	*n̥a:r	na:k˧	n̥ar˩	n̥a:r˧	n̥a˩	na˩	n̥a˩

128	cheek	*biaŋ	biaːŋ˧	biaŋ˥	biaŋ˩	baiˈ	beˈ	beːŋ˩
129	ear	*n̥a	-	-	n̥aˈ	naˈ	n̥aː˥	n̥aˈ
130	mouth	*kam	kamˈ	kaː˥	kaː˩	-	-	-
131	tongue	*lei	leːiˈ	lei˥	lei˩	leiˈ	laiˈ	leiˈ
132	saliva	*tsil	tilˈ	tsil˥	tsiːl˩	tsiˈ	-	tiˈ
133	tooth	*haː	haːˈ	haː˥	haː˩	haˈ	haˈ	-
134A	tooth	*haː	haː˥	haː˥	haːˈ	-	-	-
134B	gums	*niː	niˊ	n̥iː˩	niːˈ	neiˈ	-	ŋiːˈ
135	chin	*kʰa	kʰaːˊ	kʰaˈ	kʰaˈ	kaˈ	-	kʰaˈ
136	beard	*mul	mulˊ	m̥ulˊ	m̥ul˩	m̥i˩	muiˈ	mɯiˈ
137	shave	*met	meːtˊ	met˩	meʔ˥	-	-	-
138	back	*nVN	nuŋˈ	nuŋˊ	-	-	namˈ	namˈ
140	navel	*laːi	laːiˈ	laːiˊ	laːi˩	leˈ	luŋ˥	lai˩
141	heart	*luŋ	luŋˈ	luŋ˥	luŋˈ	lo˥	luŋ˥	luŋˈ
142	lungs	*tsuap	tuapˊ	tsuap˩	tsuapˈ	tso˩	toː˥	toːpˈ
143	liver	*tʰin	sin˩	tʰinˈ	tʰin˩	tʰiˈ	tʰinˈ	sin˥
144	intestines	*ril	gilˈ	ril˥	ril˩	riˈ	giˈ	riˈ
145	hand	*kut	kʰutˈ	kutˈ	kut˥	kuˈ	-	kut˥
146	elbow	*ki	kiu˩	kiu˩	kiu˩	kʰiˈ	kʰu˥	kiːˊ
147	armpit	*zak	zakˈ	zakˈ	zakˈ	-	jak˥	-
148A	palm	*kut	kʰutˈ	kutˈ	-	ku˥	-	kut˥
148B	palm	*pʰa	peːkˊ	pʰaˈ	pei˩	paˈ	baˈ	pʰaˈ
149A	finger	*kut	kʰutˈ	kutˈ	kut˥	ku˥	-	kut˥
149B	finger	*{daŋ}	-	daŋ˥	doŋˈ	do˥	-	-
150A	fingernail	*kut	kʰutˈ	kutˈ	-	ku˥	-	kut˥
150B	fingernail	*tin	tinˊ	tinˊ	tin˩	te˥	sinˈ	tinˈ
152	leg	*kʰeː/kʰoː	kʰeː˩	keː˧	keː˩	-	kʰoːkˊ	kʰoːˊ
153	thigh	*pʰei	pʰei˩	-	pʰei˩	-	pʰaːiˈ	pʰeiˈ
154	knee	*kʰuk	kʰukˊ	kʰuːp˩	kʰukˈ	kʰu˥	kʰu˥	kʰuːk˥
155	calf	*tsan	tanˈ	tsoːn˩	tenˈ	-	-	-
156	shin	*ŋal	ŋalˈ	ŋal˥	ŋalˈ	-	-	-
157A	foot	*kʰe/kʰo	kʰe˩	keˈ	-	-	kʰuˈ	kʰoˈ
157B	foot	*{pʰa}	bomˊ	-	-	pʰeiˈ	ponˈ	pʰa˧
159	bone	*ru	guˈ	ruˈ	ruˈ	ruˈ	huˈ	ruˈ
160A	rib	*naːk	naːkˊ	nak˩	nakˈ	-	nak˥	n̥ak˥
160B	rib	*ru	guˈ	ruˈ	ruˈ	-	huˈ	ruˈ
161A	flesh	*sa	sa˥	sa˩	saˈ	saˈ	-	-
161B	flesh	*tak	takˈ	tiː˩	takˈ	-	-	-
162	fat	*tʰaːu	tʰaːu˩	tʰau˩	tʰaːu˩	tʰauˈ	tʰauˈ	tʰaːu˥
163	skin	*gun	vunˊ	vunˊ	-	va˥	-	vɯn˩
164	blood	*tʰi	tʰiˊ	tʰi˥	tʰiː˩	tʰiː˧	tʰiːˊ	tʰi˧
165	sweat	*kʰran	-	tʰlan˩	tʰlan˩	tʰlaiˈ	-	kʰranˊ
No.	**Gloss**	**Proto Chin**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**	**Kaang**
166	pus	*n̥aːi	naːiˈ	n̥aːi˥	n̥aːi˩	n̥eˈ	n̥aːiˊ	n̥ai˧
167	excrement	*eːk	eːkˊ	eːk˩	eːkˈ	eː˥	iˈ	eːk˥

168	urine	*zun	zun˧	zun˥	zun˥	zo˧	jun˧	juŋ˧
169A	man	*pa	pa˧	pa˥	pa:˥˩	po˥˩	-	pa˧
169B	man	*mi	-	mi˧	mi:˧	-	mi˥˩	-
170A	woman	*nu	nu˧	-	nu:˥˩	no˥˩	moŋ˧	nu˧
170B	woman	*mi	-	mei˩	mi˧	-	mi˥˩	-
171	person	*mi	mi˥˩	mi˧	mi:˧	-	mi:˥˩	-
172	father	*pa	pa˦˥	pa:˥	pa:˥	po˥˩	pa˧	pa:i˧
173	mother	*nu	nu˦˥	nu:˥	nu:˥	no˥˩	nu:˧	no:i˥˩
175A	son in law	*ma:k	ma:k˦˥	mak˥	-	-	muk˧	-
175B	son in law	*sa	-	-	fa˧	sa˧	sa:˥˩	ta˧
176	husband	*ga	-	-	va:˥	va˧	va˥˩	va˧
177A	wife	*nu	-	nu˧	nu:˧	no˥˩	-	-
177B	wife	*pi:	-	pui˥˩	pi:˧	pi˧	-	-
178A	widow	*nu	-	-	nu˧	no˥˩	-	nu˧
178B	widow	*mei	mei˥	mei˩	m̥ei˥˩	-	-	m̥ei˥˩
180	yr. bro. of f.	*nau	na:u˧	nau˥˩	-	-	nau˧	nau˥
182	name	*min	min˧	miŋ˥˩	min˥	mo˧	m̥in˦˥	miŋ˥
183	village	*k^{h}ua	k^{h}ua˧	k^{h}ua˥˩	k^{h}ua˥	k^{h}i:˧	-	k^{h}o˧
184	road path	*lam	lam˦˥	-	lam˥	la:˥˩	lan˧	lam˥
185	boat	*loŋ	-	loŋ˧	lo:ŋ˥	lau˧	loŋ˦˥	-
186	house	*in	in˦˥	in˦˥	in˥	o:˥˩	in˦˥	im˥
187	door	*koŋ	koŋ˧	koŋ˥˩	ka:˧	-	k^{h}aŋ˧	kot˥˩
188	window	*t^{h}o	to:˧	tuk˧	t^{h}la˥	t^{h}a˧	t^{h}o˥˩	t^{h}oʔ˥˩
189	roof	*kruŋ	k^{h}um˥	tsuŋ˥˩	tsuŋ˧	-	-	kruŋ˥
191	wall of house	*paŋ	-	paŋ˦˥	paŋ˧	ba:˥˩	paŋ˦˥	paŋ˥
192	mat	*p^{h}er	p^{h}ek˧	p^{h}er˥˩	p^{h}er˥	p^{h}ie˧	p^{h}ak˧	p^{h}ak˥˩
193	pillow	*k^{h}am	k^{h}am˥	k^{h}am˥	-	-	kaŋ˥˩	-
194	blanket	*puan	puan˦˥	puan˦˥	puan˥	po˧	-	-
196	weave cloth	*ta	-	taʔ˥˩	taʔ˥˩	sa˥	-	taʔ˥˩
197	dye cloth	*roŋ	-	roŋ˥˩	-	ro:˧	joŋ˧	ro:ŋ˦˥
200	sew	*k^{h}rui	k^{h}u:i˧	t̪^{h}ui˥˩	t̪^{h}it˧	k^{h}o˥˩	k^{h}ok˧	k^{h}rui˩
201	needle	*p^{h}im	p^{h}im˧	-	t̪^{h}im˥	p^{h}o˧	-	prim˥
202	comb	*t^{h}i	t^{h}i˧	-	t^{h}i˥˩	t^{h}i˧	t^{h}i:˥˩	t^{h}i:˦˥
205A	pot cooking	*be:l	be:l˧	be:l˥˩	-	bei˧	-	-
205B	pot cooking	*am	-	-	um˥	-	on˥˩	am˥
207	mortar	*sum	sum˦˥	sum˦˥	sum˥	so˧	sun˥˩	sum˧
208	pestle	*suk	suk˧	-	sum˩	-	-	suk˥˩
211	firewood	*t^{h}iŋ	t^{h}iŋ˦˥	t^{h}iŋ˦˥	t^{h}iŋ˦˥	t^{h}ei˥˩	t^{h}iŋ˧	t^{h}iŋ˥
212	fire	*mei	mei˦˥	mei˦˥	mei˥	mei˥˩	m̥ai˥˩	mei˥
213	ashes	*gut	vut˧	vap˦˥	vut˧	-	-	vʉt˥˩
214A	smoke fire	*mei	mei˦˥	mei˧	mei˧	mei˥˩	m̥ai˧	mei˧
214 B	smoke fire	*k^{h}u	k^{h}u˦˥	k^{h}u:˥	k^{h}u:˥˩	k^{h}u˧	k^{h}u˥˩	k^{h}u:˦˥
No.	**Gloss**	**Proto Chin**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**	**Kaang**
216	drum	*k^{h}uaŋ	k^{h}uaŋ˧	k^{h}uaŋ˥˩	k^{h}uaŋ˥	k^{h}o:˥	-	-
218	bow (cross bow)	*li:	-	-	-	li:˥	li:˥˩	li:˦˥
219	arrow	*t^{h}al	t^{h}al˦˥	t^{h}al˦˥	t^{h}al˥	tai˥˩	-	-

220	spear	*sei	teiˊ	feiˊ	feiˇ	seiˉ	-	teiˋ
221	knife	*tsem	temˋ	tsemˉ	-	taˋ	-	timˇ
222	hear	*t^{h}ei	-	-	t^{h}eiˉ	t^{h}eiˋ	t^{h}aːiˊ	-
223	smell something	*nam	namˋ	-	n̥imˋ	t^{h}eiˋ	n̥aːnˊ	ŋ̊ʉtˇ
224	see	*mu	muˇ	m̥uːˋ	m̥uʔˉ	m̥oˋ	-	m̥uˉ
226	weep	*krap	kapˋ	ʈapˋ	ʈapˋ	-	gaˋ	krapˉ
227	eat	*ei	-	eiˉ	eiˊ	-	-	aiˇ
228	swallow	*dol	-	dolˋ	dolˋ	dauˋ	-	-
231A	thirsty	*tui	-	tuiˉ	tiːˊ	-	tuiˉ	tuiˋ
231B	thirsty	*hal	-	haːlˊ	halˇ	-	heːʔˋ	-
232	drink	*{din}	doːnˋ	inˉ	dinˉ	doˋ	-	-
233	drunk	*rui	guiˇ	ruiˇ	riˉ	riˋ	guiˋ	ruiˊ
234	vomit	*lua	luaˇ	luakˇ	luakˊ	liˉ	lokˊ	lokˊ
235A	spit	*tsil	tilˋ	tsilˉ	tsilˋ	tsiːˋ	suiˋ	tiˉ
235B	spit	*tʃ^{h}ak	siaˊ	tʃ^{h}akˋ	tʃ^{h}aːkˊ	tʃ^{h}oˉ	-	-
236	cough	*k^{h}u	k^{h}uˋ	k^{h}u	k^{h}uˉ	k^{h}oˋ	k^{h}uːˊ	k^{h}uʔˉ
237A	sneeze	*ha	hekˉ	haˉ	haˋ	-	-	ŋakˉ
237B	sneeze	*tʃ^{h}ei	tʃeiˇ	tʃ^{h}ioˇ	t^{h}iuˊ	-	-	tʃ^{h}iːˇ
238	yawn	*haːm	haːmˇ	hamˇ	hamˋ	haˋ	haːnˊ	haːmˉ
242	lick	*liak	liakˊ	liakˇ	liaʔˇ	lieˉ	leikˊ	leːkˊ
244	laugh	*nuːi	nuːiˋ	nuiˊ	niːˋ	n̥iˋ	n̥uiˊ	nʉiˇ
247	shout	*au	oːŋˇ	auˊ	auˇ	oːˋ	-	-
250A	sing	*la	laˊ	-	l̥aːˋ	l̥aːˋ	l̥aˉ	-
250B	sing	*sa	saˇ	-	saˉ	saˋ	sakˋ	-
251A	think	*ŋai	ŋaiˋ	ŋaiˋ	-	-	-	ŋaiʔˊ
251B	think	*{tua}	-	tuaˋ	-	-	-	tuʔˋ
253	forget	*ŋ̊il	ŋilˋ	ŋ̊ilˋ	-	-	-	n̥iʔˉ
256	hate	*hua	huaˊ	huaˊ	huatˋ	hoːˉ	-	-
257	wait	*ŋ̊aːk	ŋakˊ	ŋ̊aːkˇ	ŋ̊aˋ	haːˉ	giːŋˊ	ŋaŋˉ
261A	sleep	*ip	iˋ	-	iˋ	-	iˉ	ipˉ
261B	sleep	*mu	muˋ	muˉ	-	moˉ	-	-
262	snore	*n̥ar	naːkˇ	n̥arˉ	-	noˉ	-	ŋ̊aiˇ
263	dream	*maŋ	maŋˊ	maŋˊ	maŋˋ	maːˋ	maŋˉ	maŋˋ
264	hurt	*naː	naːˋ	naːˉ	-	-	naːˊ	naˋ
266	itch	*t^{h}ak	t^{h}akˋ	t^{h}akˋ	t^{h}akˋ	t^{h}aˋ	t^{h}aːkˊ	t^{h}akˉ
267	scratch	*k^{h}rut	k^{h}uatˊ	-	k^{h}euʔˉ	k^{h}oːˋ	-	k^{h}rʉːtˇ
268	shiver	*k^{h}rur	-	k^{h}urˇ	t^{h}erˉ	t^{h}eˋ	-	k^{h}retˉ
269	die	*t^{h}iː	t^{h}iːˋ	t^{h}iːˉ	t^{h}iˋ	t^{h}iːˉ	-	t^{h}iˋ
270	ghost	*k^{h}ra	k^{h}aˋ	-	t^{h}laˇ	t^{h}loːˋ	-	-
271	sit	*t^{h}uː	tuˋ	ʈ^{h}uːˉ	ʈ^{h}utˋ	toˋ	-	-
No.	**Gloss**	**Proto Chin**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**	**Kaang**
272	stand	*diŋ	diŋˋ	diŋˉ	diarˇ	diaˋ	diːˊ	dʉiˊ
273A	kneel	*k^{h}uk	k^{h}ukˊ	-	k^{h}ukˋ	k^{h}uaˊ	k^{h}ukˉ	k^{h}uˋ
273B	kneel	*{din}	dinˇ	-	-	-	duːˊ	doŋˇ
274A	walk	*lam	lamˊ	-	lamˋ	laːˋ	lanˉ	lamˋ

274B	walk	*{CVC}	pai˧	-	len˨	-	ke˥	tet˥
275	crawl	*gak	vak˨	vak˨	-	-	vak˥	-
277	enter	*lut	lut˧	lu:t˨	lut˥	-	-	lut˧
279	push	*nam	-	nam˧	nam˥	-	nui˥	-
281	kick	*sui/pet	sui˨/pek˧	pet˥	tʃʰui?˥	tʃʰei˩	tʰui˥	pet˥
283	fall	*kra	kia˨	tla:˨	tla:˥	tla˩	ka:k˥	krui˧
284A	swim	*tui	tui˧	tui˧	ti˥	ti˥	tui˥	tui˧
284B	swim	*zo	-	-	-	zo˥	jao˥	jok˥
287	flow	*luaŋ	luaŋ˧	luaŋ˧	luaŋ˨	lo˧	loŋ˥	loŋ˨
288	give	*pe:	pia˧	pe:˨	pe:k˧	pia˥	pe:k˥	pe˧
289	tie	*{to:n}	-	ʈo:n˥	ʈem˥	tau˥	ko:n˥	-
291	rub scrub	*no:t	no:t˧	no:t˨	n̥or˧	-	-	mo:t˨
292	wash	*sil	sil˧	sil˧	-	si:˥	si˥	-
293	launder	*sop	so:p˧	su˨	suk˩	so˥	suk˥	-
294A	bathe	*tui	-	-	-	ti˧	tui˥	tui˧
294B	bathe	*sil	sil˧	-	-	si˧	-	sʰi˧
297A	cut hair	*sam	sam˧	sam˧	-	sa˥	san˥	-
297B	cut hair	*met	me:t˧	met˨	me˩	-	-	-
299	grind	*rial	goi˧	rial˧	rial˧	ria˩	-	re:t˨
300	plant	*tsiŋ	-	tsiŋ˧	tsin˥	tsei˩	-	-
301	dig	*tso	to˧	tso˥	tso?˩	tso˩	-	to˨
302	bury corpse	*pʰu:m	pʰu:m˧	pʰu:m˧	pʰum˧	bo:˥	pʰun˥	bui˧
304	dry something	*pʰo	pʰo˧	pʰo:˥	pʰo:˥	-	-	pʰo˨
305	pound rice	*su	su:˨	-	suk˩	-	-	su˧
307	boil something	*so	-	so:˥	tʃʰum˩	-	-	so˧
312	dance	*la:m	la:m˧	la:m˧	la:m˨	la:˧	lan˧	lam˩
313	shoot	*ka:p	ka:p˧	ka:p˨	ka˩	ka˥	ka:˥	ka:p˥
315	kill	*tʰat	tʰat˩	tʰat˩	tʰa˥	tʰia˧	-	-
317	buy	*lei	lei˧	lei˧	-	lei˥	-	lei˧
318	sell	*zuar	zuak˧	zuar˥	zuar˥	zia˩	jo:˧	joi˩
319	exchange	*kʰreŋ	kʰe:k˧	tʰleŋ˨	tʰlen˥	tʰlai˩	-	tʰoŋ˧
320	pay	*pia	pi:a˧	pe:˨	pe:k˨	pia˧	pei˥	-
321	steal	*ru:	gu:˧	ru:˨	-	ru:˧	-	ru˧
322	one person	*kʰat	kʰat˩	kʰat˩	kʰat˩	kʰa˧	-	-
323	two	*n̥i	ni˩	n̥i˩	n̥i?˩	n̥e˩	m̥i:˥	n̥i˩
324	three	*tʰum	tʰum˧	tʰum˧	tʰum˨	tʰo˧	tʰun˧	tʰum˨
325	four	*li	li˧	li:˧	li˨	li˧	li˧	li˩
326	five	*ŋa	ŋa˧	ŋa:˧	ŋa:˨	ŋa˧	ŋa:˧	ŋa˧
327	six	*ruk	guk˩	ruk˩	ruk˩	ru:˧	ruk˥	ruk˩
328A	seven	*sa	sa˥	sa˧	sa˧	sa˧	sa˧	pa˧
No.	**Gloss**	**Proto Chin**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**	**Kaang**
328B	seven	*ri	gi˩	ri˩	ri?˥	ri˧	ri?˥	ri˩
329	eight	*riat	giat˧	riat˨	riat˨	re˩	-	ret˧
330	nine	*kua	kua˧	kua˧	kua˨	ki:˩	ko˥	ko˨
331	ten	*r̥a	so:m˨	so:m˨	r̥a:˨	r̥a:˩	ha˥	r̥a˩
332	hundred	*za	za:˨	za:˨	za˧	za˧	-	-

334	many	*tam	tam˧	tam˧	tam˥˩	-	-	dam˧
337	few	*to:m	to:m˨	tlem˧	tlom˥˩	-	-	-
339	big	*lian	lian˥˩	lian˥˩	-	lai˨	len˧	-
341	long	*sau	sa:u˧	-	sau˥˩	-	sau˥	sau˥˩
342	short (length)	*toi	tom˧	to:i˧	to:i˥˩	-	toi˨	toi˥˩
343	tall	*sa:ŋ	sa:ŋ˨	sa:ŋ˥	sa:ŋ˥˩	sa˨	saŋ˧	-
344	short (height)	*niam	niam˧	n̥iam˧	niam˥˩	n̥ai˥	n̥en˥	nem˨
345	thick	*tʃʰa	sa?˨	tʃʰa?˨	tʃʰa?˥	tʃa˨	sa:˧	sa˥
346	thin	*pan	pa˧	pan˥	pan˥˩	pa:˥	pa:˧	pan˧
347	fat	*tʰau	tʰau˨	tʰa:u˥	tʰau˥˩	tʰo:˨	tʰo˧	tʰau˥˩
349	wide (breadth)	*kau	-	-	kau˧	ko˨	kau˧	kau˥˩
351	deep	*tʰu:k	tʰu:k˧	tʰu:k˥˩	tʰuk˨	tʰu˥	tʰo:k˥	tʰuk˧
355A	right side	{-}	-	-	-	-	-	-
355B	left side	*lam	lam˧	lam˧	lei˨	la˨	-	lam˨
356A	left side	*gei	vei˧	vei˧	-	vei˨	gi˨	-
356B	left side	*lam	lam˧	lam˧	lei˨	la˨	-	lam˨
358	far	*l̥a:	la˧	l̥a:˥	l̥a:˨	l̥a˨	l̥a˥	-
359	near	*n̥a:i	na:i˧	n̥a:i˧	nai?˥	n̥e˥	n̥ai˧	-
360A	this	*hi	hi?˥	hei˥˩	hi˨	hi˨	hi˥	-
360B	this	*hi	-	hi˥	hi˨	hi?˨	-	-
361A	that	*hua:	hua:˨	kʰa˥˩	kʰi˨	ho:˥	hu˥	kho˨
361B	that	*kʰa	hua:˨	kʰa˥˩	kʰi˨	ho:˥	hu˥	kho˨
364	red	*sen	san˨	sen˥	sen˥˩	sai˨	tʰin˧	sen˨
365	green	*r̥iŋ	eŋ˨/hiŋ˨	r̥iŋ˥	r̥iŋ˥˩	r̥eo˨	eŋ˧	kriŋ˨
366	yellow	*Na:i	na:i˨	-	ai˨	mai˨	-	a:i˧
368	new	*tʰar	tʰa:k˥	tʰar˥	tʰar˥˩	tʰia˨	tʰa˨	tʰai˥˩
369	old	*l̥ui	lu:i˨	l̥ui˥	l̥un˧	-	-	-
370	dark	*mial	mial˧	-	mui˧	-	-	m̥ʉp˥
373	different	*CaN	lam˧	r̥aŋ˥	daŋ˨	na˥	laŋ˧	lak˥
374	sweet	*kʰrum	kʰum˨	tʰlum˥	tʰlum˥˩	tʰlo˨	tui˧	-
375	sour	*tʰur	tʰuk˧	tʰu:r˧	tʰor˥˩	tʰu˥	tʰo:k˧	tʰui˧
376	bitter	*kʰa:	kʰa:˧	kʰa:˥˩	kʰa:˨	kʰa:˥˩	kʰa:˥	kʰa˥
377	spicy hot	*tʰak	tʰak˨	tʰak˨	tʰak˨	-	-	-
380	dry, to be dry	*ro	-	ro:˥	rau˨	-	-	roŋ˧
382	hot	*lVC	-	lum˥	-	lo˨	-	l̥ok˥
384	sharp	*Cum	hiam˨	zum˥	zum˨	-	sui˨	sʰum˧

No.	Gloss	Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
385	blunt	*moːl	moːl˧	-	n̥oːl˩	moː˥	-	moŋ˩
386	heavy	*rit	gik˧	rit˧	rit˥	r̥iː˧	giːt˧	riʔ˥
387	hard	*Cak	sak˧	sak˧	hak˥	-	tak˧	-
388	smooth	*naːl	-	naːl˧	mil˩	n̥ia˥	-	n̥ai˧
389	fast	*raŋ	laːŋ˧	raŋ˥	reŋ˧	-	raŋ˥	-
393	tired	*ba	-	-	ba˥	ba˧	bai˥	boŋ˥
394A	blind	*mik	mit˧	mit˧	mit˧	maː˥	mi˧	mik˥
394B	blind	*tso	to˩	-	tso˥	tso˧	-	-
395A	deaf	*n̥a	-	-	n̥a˥	na˧	na˥	n̥a˩
395A	deaf	*paŋ	-	-	-	pa˥	biŋ˥	paŋ˧
399	bad	*tʃʰia	sia˧	tʃʰia˩	tʃʰia˩	tʃʰeː˧	siː˥	se˥
402	when (past)	*tik	tik˧	tik˧	tik˥	ti˧	tu˧	tia˩
403	where	*koi	koi˧	kʰoi˧	kʰoi˧	kʰa˥	-	-
403	where	*a	a˧	a˧	a˥	-	o˧	-
404	who	*hau	-	-	hau˧	hau˩	-	ha˥
406	how many person	*zat	za˧	zat˧	zat˥	zi˥	-	jat˧
407A	stream	*tui	-	-	ti˧	ti˥	-	tui˧
407B	stream	*ga	-	-	va˩	va˩	va˧	-
408	wet rice field	*lo	lo˧	loː˧	lei˩	lei˥	li˧	lai˧
409	ripe	*m̥in	min˧	min˥	m̥in˩	m̥a˧	m̥in˧	m̥in˩
410	rice seedling	*tsaŋ	-	-	tsaŋ˩	tsa˧	saŋ˧	taŋ˥
411A	pangolin	*sa	sa˥	sa˧	sa˥	-	-	-
411B	pangolin	*pʰu	pʰu˩	pʰuː˥	pʰuː˧	-	-	pʰuː˧
412	crested	*tʃʰuaŋ	suaŋ˧	tʃʰuaŋ˥	tʃʰuaŋ˩	tsa˧	-	siŋ˥
413	water leech	*liːt	liːt˧	l̥iːt˩	liːt˥	l̥i˥	-	liːt˧
414	land leech	*got	vot˧	vat˧	vut˧	va˧	va˥	vat˥
415A	earth worm	*tsaŋ	taŋ˧	tsaŋ˥	tsaŋ˩	tsa˥	-	taŋ˧
415B	earth worm	*tsel	tel˩	-	tsel˥	-	tei˥	-
416A	I (1s)	*kei	kei˧	kei˧	kei˧	kei˧	kai˥	kei˩
416B	I (1s)	*ma	ma˧	ma˧	maʔ˥	ma˧	-	-
417A	thou (2s)	*naŋ	naŋ˧	naŋ˧	naŋ˧	na˧	naŋ˥	naŋ˩
417B	thou (2s)	*ma	ma˧	ma˧	maʔ˥	ma˧	-	-
418A	it	*a	a˥	a˧	a˧	a˥	a˧	a˧
428B	it	*ma	ma˧	ma˧	maʔ˥	maʔ˧	-	-
429A	we (1p)	*kei	ei˧	kan˧	kan˧	kei˥	kai˧	kei˧
429B	we (1p)	*ma	mau˩	-	maʔ˥	mo˥	mi˧	mi˥
420A	you (2p)	*nan	no˩	in˧	nan˧	na˥	naŋ˧	naŋ˧
420B	you (2p)	*ma	mau˩	-	maʔ˥	mo˥	mi˧	mi˧
421A	they	*an	a˥	an˧	an˧	a˥	ni˧	an˧
421B	they	*ma	mau˩	-	maʔ˥	mo˥	mi˥	ni˥
423	take	*laː	laː˧	laː˩	laːk˧	la˧	laː˥	-
425	split with knife	*tsan	tan˧	-	tsan˥	tsu˧	-	sʰaːt˧
426	bend	*koːi	koːi˧	koi˩	koːi˥	ko˥	kon˧	

No.	Gloss	Proto Chin	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
427	lift	*tsoi	toi˧	tsoi˥	tsoi˦	tso˧		-
430	half a quantity	*tsan	-	tsan˩	tan˩	tseu˦	-	-
432	warm	*lum	lu:m˧	lum˦	lum˧	lo:˩	-	-
434	difficult	*har	hak˦	har˦	har˨	-	-	-
437	elder bro. of m	*u:	u:˧	u:˦	u˧	-	-	-
438A	elder sister of f	*u:	u:˧	u:˦	u˧	-	-	-
438B	elder sister of f	*nu	nu˥	nu˨	nu˦	-	nu˦	-
439	elder sister of m	*nu	nu˥	nu˨	nu˧	-	nu˦	-
440A	yr. bro. of m	*nau	na:u˧	nau˦	nau˧	-	nau˦	nau˩
440B	yr. bro. of m	*pa	pa˥	-	pa˦	-	-	pa˦
441A	yr. sister of f	*nau	na:u˧	far˦	nau˧	-	-	nau˩
441B	yr. sister of f	*nu	nu˥	nu:˨	nu˦	-	-	nu˥
442	yr. sister of m	*nu	nu˥	nu:˨	nu˦	-	nu˦	nu˦

APPENDIX B

RECONSTRUCTED WORDS

The following table shows the reconstructed Proto Chin vocabulary. Reconstructed words for disyllabic forms are the combination of each reconstructed syllables shown in Appendix A. Where there are two completing word forms, they are added as additional entity with the same reference number. In any disyllabic which is a compound syllable of A and B in Appendix A, a dot (.) will be used as a sign of syllable break. The left-hand column shows the reference number. The final two columns provide glosses of words and reconstructed form.

No.	**Gloss**	**Proto Chin**
001	sky	*gaːn
002	sun	*ni
003	moon	*k^{h}raː
004	star	*ar.si
005	cloud	*mei
007	rain	*rua
010	thunder	*k^{h}o
011	shadow	*l̥im
012	night	*zan
013	day	*ni
No.	**Gloss**	**Proto Chin**
014	morning	*ziŋ
015	noon	*tʃ^{h}un
016	yesterday	*zaː.ni
018	year	*kum
019	east	*tʃ^{h}ua.lam
020	west	*krak.lam
021	north	*tʃ^{h}ak.lam
022	south	*k^{h}raŋ.lam
023	water	*tui
025	sea	*tui.pi
No.	**Gloss**	**Proto Chin**
026	earth/soil	*lei
028	dust	*gui
029	stone	*luŋ

030	sand	*{seː}
033	silver	*ŋuːn
034	iron	*tʰir
035	mountain	*kraŋ
036	cave	*kʰul
037	forest	*ram
038	tree	*tʰiŋ.kuŋ
039	branch	*tʰiŋ.{Ce}
040	tree bark	*tʰiŋ.hoːŋ
041	thorn	*l̥iŋ
043	leaf	*tʰiŋ.n̥a
044	flower	*paŋ.par
045	fruit	*tʰei
048	bamboo	*rua
049	bamboo shoot	*rua.toi
050	mushroom	*pa
051	rattan	*r̥ui
052	kapok	*paŋ
053	sugarcane	*su
056	liquor	*zuː
057	banana	*ban.l̥aː
059	mango	*haːi
062	eggplant	*bok.boːn
064	ginger	*tʰiːŋ
066	corn	*gai.mim
067	red pepper	*{mal}.{Caː}
068	paddy rice	*sa
069	cooked rice	*bu
070	pounded rice	*taŋ
071	salt	*tsiː
072	animal	*ram.saː
073	tiger	*sa.kei
074	bear	*gom
075	deer	*sa.zuk
076	monkey	*zoːŋ
077	gibbon	*{hu}
078	rabbit	*sa.{ge}
079	porcupine	*sa.ku
080	rat	*zu
081	dog	*ui
082	bark	*nak
No.	**Gloss**	**Proto Chin**
084	cat	*zo.{CV}
085	pig	*gok
087	milk	*n̥u
088	buffalo	*loi

089	horn of buffalo	*kiː
090	tail	*mei
091	elephant	*saːi
092	elephant tusk	*{ŋ̊o}
093	bird	*ga
094	bird's nest	*bu
095	wing	*kʰra
096	feather	*m̥ul
097	fly	*zuaŋ
098	egg	*tui
099	chicken	*aːr
101	fish	*ŋa
102	snake	*rul
104	turtle	*sum.kʰok
106	frog	*u
107	insect	*luŋ
108	spider	*mom
109	spider web	*mom.bu
110	louse head	*r̥ik
111	termite	*lei
113	snail	*tseŋ
114	mosquito	*kaːŋ
115	bee	*kʰoːi
116	fly	*tʰo
117	butterfly	*pa.lep
119	head	*luː
120	face	*mai
121	brain	*kʰrok
122	hair	*sam
123	forehead	*tsal
124	eyebrow	*mik.kʰu
125	eye	*mik
127	nose	*n̥aːr
128	cheek	*biaŋ
129	ear	*na̠
130	mouth	*kam
131	tongue	*lei
132	saliva	*tsil
133	tooth	*haː
134	tooth	*haː.niː
No.	**Gloss**	**Proto Chin**
135	chin	*kʰa
136	beard	*mul
137	shave	*met
138	back	*nVN
140	navel	*laːi

141	heart	*luŋ
142	lungs	*tsuap
143	liver	*t^{h}in
144	intestines	*ril
145	hand	*kut
146	elbow	*ki
147	armpit	*zak
148	palm	*kut.p^{h}a
149	finger	*kut.{daŋ}
150	fingernail	*kut.tin
152	leg	*k^{h}eː/k^{h}oː
153	thigh	*p^{h}ei
154	knee	*k^{h}uk
155	calf	*tsan
156	shin	*ŋal
157	foot	*k^{h}e.{p^{h}a}
157	foot	*k^{h}o.{p^{h}a}
159	bone	*ru
160	rib	*naːk.ru
161	flesh	*sa.tak
162	fat	*t^{h}aːu
163	skin	*gun
164	blood	*t^{h}i
165	sweat	*k^{h}ran
166	pus	*ŋ̊aːi
167	excrement	*eːk
168	urine	*zun
169	man	*pa.mi
170	woman	*nu.mi
171	person	*mi
172	father	*pa
173	mother	*nu
175	son in law	*maːk
175	son in law	*sa
176	husband	*ga
177	wife	*nu.piː
178	widow	*nu.mei
180	yr. bro. of f.	*nau
No.	**Gloss**	**Proto Chin**
182	name	*min
183	village	*k^{h}ua
184	road/path	*lam
185	boat	*loŋ
186	house	*in
187	door	*koŋ
188	window	*t^{h}o

189	roof	*kruŋ
191	wall of house	*paŋ
192	mat	*p^{h}er
193	pillow	*k^{h}am
194	blanket	*puan
196	weave (cloth)	*ta
197	dye (cloth)	*roŋ
200	sew	*k^{h}rui
201	needle	*p^{h}im
202	comb	*t^{h}i
205	pot (cooking)	*beːl
205	pot (cooking)	*am
207	mortar	*sum
208	pestle	*suk
211	firewood	*t^{h}iŋ
212	fire	*mei
213	ashes	*gut
214	smoke (fire)	*mei.k^{h}u
216	drum	*k^{h}uaŋ
218	bow (cross bow)	*liː
219	arrow	*t^{h}al
220	spear	*sei
221	knife	*tsem
222	hear	*t^{h}ei
223	smell something	*nam
224	see	*mu
226	weep	*krap
227	eat	*ei
228	swallow	*dol
231	thirsty	*tui.hal
232	drink	*{din}
233	drunk	*rui
234	vomit	*lua
235	spit	*tsil.tʃ^{h}ak
236	cough	*k^{h}u
237	sneeze	*ha.tʃ^{h}ei
238	yawn	*haːm
No.	**Gloss**	**Proto Chin**
242	lick	*liak
244	laugh	*nuːi
247	shout	*au
250	sing	*la.sa
251	think	*ŋai.{tua}
253	forget	*ŋ̊il
256	hate	*hua
257	wait	*ŋ̊aːk

261	sleep	*ip.mu
262	snore	*n̥ar
263	dream	*maŋ
264	hurt	*na:
266	itch	*t^hak
267	scratch	*k^hrut
268	shiver	*k^hrur
269	die	*t^hi:
270	ghost	*k^hra
271	sit	*t^hu:
272	stand	*diŋ
273	kneel	*k^huk.{din}
274	walk	*lam.{CVC}
275	crawl	*gak
277	enter	*lut
279	push	*nam
281	kick	*sui/pet
283	fall	*kra
284	swim	*tui.zo
287	flow	*luaŋ
288	give	*pe:
289	tie	*{to:n}
291	rub/scrub	*no:t
292	wash	*sil
293	launder	*sop
294	bathe	*tui.sil
297	cut hair	*sam.met
299	grind	*rial
300	plant	*tsiŋ
301	dig	*tso
302	bury corpse	*p^hu:m
304	dry something	*p^ho
305	pound rice	*su
307	boil something	*so
312	dance	*la:m
313	shoot	*ka:p
No.	**Gloss**	**Proto Chin**
315	kill	*t^hat
317	buy	*lei
318	sell	*zuar
319	exchange	*k^hreŋ
320	pay	*pia
321	steal	*ru:
322	one person	*k^hat
323	two	*n̥i
324	three	*t^hum

325	four	*li
326	five	*ŋa
327	six	*ruk
328	seven	*sa.ri
329	eight	*riat
330	nine	*kua
331	ten	*r̥a
332	hundred	*za
334	many	*tam
337	few	*to:m
339	big	*lian
341	long	*sau
342	short (length)	*toi
343	tall	*sa:ŋ
344	short (height)	*niam
345	thick	*$tʃ^h$a
346	thin	*pan
347	fat	*t^hau
349	wide (breadth)	*kau
351	deep	*t^hu:k
355	right side	*{}.lam
356	left side	*gei.lam
358	far	*l̥a:
359	near	*n̥a:i
360	this	*hi.hi
361	that	*hua:
361	that	*k^ha
364	red	*sen
365	green	*r̥iŋ
366	yellow	*Na:i
368	new	*t^har
369	old	*l̥ui
370	dark	*mial
373	different	*CaN
374	sweet	*k^hrum
No.	**Gloss**	**Proto Chin**
375	sour	*t^hur
376	bitter	*k^ha:
377	spicy hot	*t^hak
380	dry, to be dry	*ro
382	hot	*lVC
384	sharp	*Cum
385	blunt	*mo:l
386	heavy	*rit
387	hard	*Cak
388	smooth	*na:l

389	fast	*raŋ
393	tired	*ba
394	blind	*mik.tso
395	deaf	*n̥a.paŋ
399	bad	*tʃʰia
402	when (past)	*tik
403	where	*koi
403	where	*a
404	who	*hau
406	how many person	*zat
407	stream	*tui.ga
408	wet rice field	*lo
409	ripe	*m̥in
410	rice seedling	*taŋ
411	pangolin	*sa.pʰu
No.	**Gloss**	**Proto Chin**
412	crested	*tʃʰuaŋ
413	water leech	*liːt
414	land leech	*got
415	earth worm	*tsaŋ.tsel

416	I (1s)	*kei.ma
417	thou (2s)	*naŋ.ma
417	thou (2s)	*ma
418	it	*a.ma
429	we (1p)	*kei.ma
420	you (2p)	*nan.ma
421	they	*an.ma
423	take	*laː
425	split with knife	*tsan
426	bend	*koːi
427	lift	*tsoi
430	half a quantity	*tsan
432	warm	*lum
434	difficult	*har
437	elder bro. of m	*uː
438	elder sister of f	*uː.nu
439	elder sister of m	*nu
440	yr. bro. of m	*nau.pa
441	yr. sister of f	*nau.nu
442	yr. sister of m	*nu

APPENDIX C

RECONSTRUCTED WORDS ALPHABETIZED BY CHIN

The following table shows the reconstructed Proto Chin vocabulary alphabetized by Proto Chin.

No.	**Gloss**	**Proto Chin**
355	right side	*{}.lam
092	elephant tusk	*{ŋ̊o}
232	drink	*{din}
077	gibbon	*{hu}
067	red pepper	*{mal}.{Caː}
030	sand	*{seː}
289	tie	*{toːn}
373	different	*CaN
387	hard	*Cak
384	sharp	*Cum
366	yellow	*Naːi
257	wait	*ŋ̊aːk
253	forget	*ŋ̊il
101	fish	*ŋa
No.	**Gloss**	**Proto Chin**
326	five	*ŋa
251	think	*ŋai.{tua}
156	shin	*ŋal
033	silver	*ŋuːn
403	where	*a
418	it	*a.ma
205	pot 9cooking)	*am
421	they	*an.ma
004	star	*ar.si
247	shout	*au
099	chicken	*aːr
393	tired	*ba
057	banana	*ban.l̥aː
205	pot (cooking)	*beːl
No.	**Gloss**	**Proto Chin**
128	cheek	*biaŋ
062	eggplant	*bok.boːn
069	cooked rice	*bu
094	bird's nest	*bu
272	stand	*diŋ
228	swallow	*dol
227	eat	*ei
167	excrement	*eːk
093	bird	*ga
176	husband	*ga
066	corn	*gai.mim
275	crawl	*gak
001	sky	*gaːn
356	left side	*gei.lam
085	pig	*gok

074	bear	*gom
414	land leech	*got
028	dust	*gui
163	skin	*gun
213	ashes	*gut
237	sneeze	*ha.tʃ^{h}ei
434	difficult	*har
404	who	*hau
133	tooth	*ha:
134	tooth	*ha:.ni:
059	mango	*ha:i
238	yawn	*ha:m
360	this	*hi.hi
256	hate	*hua
361	that	*hua:
186	house	*in
261	sleep	*ip.mu
135	chin	*k^{h}a
361	that	*k^{h}a
193	pillow	*k^{h}am
322	one person	*k^{h}at
376	bitter	*k^{h}a:
157	foot	*k^{h}e.{p^{h}a}
152	leg	*k^{h}e:/k^{h}o:
010	thunder	*k^{h}o
157	foot	*k^{h}o.{p^{h}a}
115	bee	*k^{h}o:i
095	wing	*k^{h}ra
270	ghost	*k^{h}ra
No.	**Gloss**	**Proto Chin**
022	south	*k^{h}raŋ.lam
165	sweat	*k^{h}ran
003	moon	*k^{h}ra:
319	exchange	*k^{h}reŋ
121	brain	*k^{h}rok
200	sew	*k^{h}rui
374	sweet	*k^{h}rum
268	shiver	*k^{h}rur
267	scratch	*k^{h}rut
236	cough	*k^{h}u
183	village	*k^{h}ua
216	drum	*k^{h}uaŋ
154	knee	*k^{h}uk
273	kneel	*k^{h}uk.{din}
036	cave	*k^{h}ul
130	mouth	*kam

349	wide (breadth)	*kau
114	mosquito	*ka:ŋ
313	shoot	*ka:p
416	I (1s)	*kei.ma
429	we (1p)	*kei.ma
146	elbow	*ki
089	horn of buffalo	*ki:
187	door	*koŋ
403	where	*koi
426	bend	*ko:i
283	fall	*kra
035	mountain	*kraŋ
020	west	*krak.lam
226	weep	*krap
189	roof	*kruŋ
330	nine	*kua
018	year	*kum
145	hand	*kut
149	finger	*kut.{daŋ}
148	palm	*kut.p^{h}a
150	fingernail	*kut.tin
382	hot	*lVC
358	far	*l̥a:
041	thorn	*l̥iŋ
011	shadow	*l̥im
369	old	*l̥ui
250	sing	*la.sa
184	road/path	*lam
No.	**Gloss**	**Proto Chin**
274	walk	*lam.{CVC}
423	take	*la:
140	navel	*la:i
312	dance	*la:m
026	earth soil	*lei
111	termite	*lei
131	tongue	*lei
317	buy	*lei
325	four	*li
242	lick	*liak
339	big	*lian
218	bow (cross bow)	*li:
413	water leech	*li:t
408	wet rice field	*lo
185	boat	*loŋ
088	buffalo	*loi
029	stone	*luŋ

107	insect	*luŋ
141	heart	*luŋ
234	vomit	*lua
287	flow	*luaŋ
432	warm	*lum
277	enter	*lut
119	head	*luː
409	ripe	*m̥in
096	feather	*m̥ul
417	thou (2s)	*ma
263	dream	*maŋ
120	face	*mai
175	son in law	*maːk
005	cloud	*mei
090	tail	*mei
212	fire	*mei
214	smoke fire	*mei.k^{h}u
137	shave	*met
171	person	*mi
370	dark	*mial
125	eye	*mik
124	eyebrow	*mik.k^{h}u
394	blind	*mik.tso
182	name	*min
108	spider	*mom
109	spider web	*mom.bu
385	blunt	*moːl
No.	**Gloss**	**Proto Chin**
224	see	*mu
136	beard	*mul
138	back	*nVN
395	deaf	*n̥a.paŋ
262	snore	*n̥ar
166	pus	*n̥aːi
359	near	*n̥aːi
127	nose	*n̥aːr
323	two	*n̥i
087	milk	*n̥u
129	ear	*nạ
417	thou (2s)	*naŋ.ma
082	bark	*nak
223	smell something	*nam
279	push	*nam
420	you (2p)	*nan.ma
180	yr. bro. of f.	*nau
441	yr. sister of f	*nau.nu

440	yr. bro. of m	*nau.pa
264	hurt	*naː
160	rib	*naːk.ru
388	smooth	*naːl
002	sun	*ni
013	day	*ni
344	short (height)	*niam
291	rub scrub	*noːt
173	mother	*nu
439	elder sister of m	*nu
442	yr. sister of m	*nu
178	widow	*nu.mei
170	woman	*nu.mi
177	wife	*nu.piː
244	laugh	*nuːi
153	thigh	*p^{h}ei
192	mat	*p^{h}er
201	needle	*p^{h}im
304	dry something	*p^{h}o
302	bury (corpse)	*p^{h}uːm
050	mushroom	*pa
172	father	*pa
117	butterfly	*pa.lep
169	man	*pa.mi
052	kapok	*paŋ
191	wall of house	*paŋ
No.	**Gloss**	**Proto Chin**
044	flower	*paŋ.par
346	thin	*pan
288	give	*peː
320	pay	*pia
194	blanket	*puan
331	ten	*r̥a
365	green	*r̥iŋ
110	louse (head)	*r̥ik
051	rattan	*r̥ui
389	fast	*raŋ
037	forest	*ram
072	animal	*ram.saː
299	grind	*rial
329	eight	*riat
144	intestines	*ril
386	heavy	*rit
380	dry, to be dry	*ro
197	dye (cloth)	*roŋ
159	bone	*ru

007	rain	*rua
048	bamboo	*rua
049	bamboo shoot	*rua.toi
233	drunk	*rui
327	six	*ruk
102	snake	*rul
321	steal	*ruː
068	paddy rice	*sa
175	son in law	*sa
078	rabbit	*sa.{ge}
073	tiger	*sa.kei
079	porcupine	*sa.ku
411	pangolin	*sa.pʰu
328	seven	*sa.ri
161	flesh	*sa.tak
075	deer	*sa.zuk
122	hair	*sam
297	cut (hair)	*sam.met
341	long	*sau
343	tall	*saːŋ
091	elephant	*saːi
220	spear	*sei
364	red	*sen
292	wash	*sil
307	boil something	*so
No.	**Gloss**	**Proto Chin**
293	launder	*sop
053	sugarcane	*su
305	pound rice	*su
281	kick	*sui/pet
208	pestle	*suk
207	mortar	*sum
104	turtle	*sum.kʰok
266	itch	*tʰak
377	spicy hot	*tʰak
219	arrow	*tʰal
368	new	*tʰar
315	kill	*tʰat
347	fat	*tʰau
162	fat	*tʰaːu
045	fruit	*tʰei
222	hear	*tʰei
164	blood	*tʰi
202	comb	*tʰi
211	firewood	*tʰiŋ
039	branch	*tʰiŋ.{Ce}

040	tree bark	*tʰiŋ.hoːŋ
038	tree	*tʰiŋ.kuŋ
043	leaf	*tʰiŋ.n̥a
143	liver	*tʰin
034	iron	*tʰir
269	die	*tʰiː
064	ginger	*tʰiːŋ
116	fly	*tʰo
188	window	*tʰo
324	three	*tʰum
375	sour	*tʰur
271	sit	*tʰuː
351	deep	*tʰuːk
345	thick	*tʃʰa
021	north	*tʃʰak.lam
399	bad	*tʃʰia
132	saliva	*tsil
019	east	*tʃʰua.lam
412	crested	*tʃʰuaŋ
015	noon	*tʃʰun
196	weave (cloth)	*ta
070	pounded rice	*taŋ
410	rice seedling	*taŋ
334	many	*tam
No.	**Gloss**	**Proto Chin**
402	when (past)	*tik
342	short (length)	*toi
337	few	*toːm
415	earth worm	*tsaŋ.tsel
123	forehead	*tsal
155	calf	*tsan
425	split with knife	*tsan
430	half a quantity	*tsan
113	snail	*tseŋ
221	knife	*tsem
300	plant	*tsiŋ
235	spit	*tsil.tʃʰak
071	salt	*tsiː
301	dig	*tso
427	lift	*tsoi
142	lungs	*tsuap
023	water	*tui
098	egg	*tui
407	stream	*tui.ga
231	thirsty	*tui.hal
025	sea	*tui.pi

No.	Gloss	Proto Chin
294	bathe	*tui.sil
284	swim	*tui.zo
106	frog	*u
081	dog	*ui
437	elder bro. of m	*uː
438	elder sister of f	*uː.nu
332	hundred	*za
147	armpit	*zak
012	night	*zan
406	how many person	*zat
016	yesterday	*zaː.ni
014	morning	*ziŋ
084	cat	*zo.{CV}
076	monkey	*zoːŋ
080	rat	*zu
097	fly	*zuaŋ
318	sell	*zuar
168	urine	*zun
056	liquor	*zuː

APPENDIX D

RECONSTRUCTED WORDS ALPHABETIZED BY GLOSS

The following table shows the reconstructed Proto Chin vocabulary alphabetized by English gloss. There is no entity for the words which does not have proto form.

No.	Gloss	Proto Chin
072	animal	*ram.saː
147	armpit	*zak
219	arrow	*t^hal
213	ashes	*gut
138	back	*nVN
399	bad	*t$ʃ^h$ia
048	bamboo	*rua
049	bamboo shoot	*rua.toi
057	banana	*ban.l̥aː
082	bark	*nak
294	bathe	*tui.sil
074	bear	*gom
136	beard	*mul
No.	**Gloss**	**Proto Chin**
115	bee	*k^hoːi
426	bend	*koːi
339	big	*lian
093	bird	*ga
094	bird's nest	*bu
376	bitter	*k^haː

194	blanket	*puan
394	blind	*mik.tso
164	blood	*t^hi
385	blunt	*moːl
185	boat	*loŋ
307	boil something	*so
159	bone	*ru
No.	**Gloss**	**Proto Chin**
218	bow cross bow	*liː
121	brain	*k^hrok
039	branch	*t^hiŋ.{Ce}
088	buffalo	*loi
302	bury corpse	*p^huːm
117	butterfly	*pa.lep
317	buy	*lei
155	calf	*tsan
084	cat	*zo.{CV}
036	cave	*k^hul
128	cheek	*biaŋ
099	chicken	*aːr
135	chin	*k^ha

005	cloud	*mei
202	comb	*t^hi
069	cooked rice	*bu
066	corn	*gai.mim
236	cough	*k^hu
275	crawl	*gak
412	crested	*$tʃ^h$uaŋ
297	cut hair	*sam.met
312	dance	*laːm
370	dark	*mial
013	day	*ni
395	deaf	*ŋ̊a.paŋ
351	deep	*t^huːk
075	deer	*sa.zuk
269	die	*t^hiː
373	different	*CaN
434	difficult	*har
301	dig	*tso
081	dog	*ui
187	door	*koŋ
263	dream	*maŋ
232	drink	*{din}
216	drum	*k^huaŋ
233	drunk	*rui
304	dry something	*p^ho
380	dry, to be dry	*ro
028	dust	*gui
197	dye cloth	*roŋ
129	ear	*ŋ̊a
026	earth soil	*lei
415	earth worm	*tsaŋ.tsel
No.	**Gloss**	**Proto Chin**
019	east	*$tʃ^h$ua.lam
227	eat	*ei
098	egg	*tui
062	eggplant	*bok.boːn
329	eight	*riat
146	elbow	*ki
437	elder bro. of m	*uː
438	elder sister of f	*uː.nu
439	elder sister of m	*nu
091	elephant	*saːi
092	elephant tusk	*{ŋ̊o}
277	enter	*lut
319	exchange	*k^hreŋ
167	excrement	*eːk

125	eye	*mik
124	eyebrow	*mik.k^hu
120	face	*mai
283	fall	*kra
358	far	*l̥aː
389	fast	*raŋ
162	fat	*t^haːu
347	fat	*t^hau
172	father	*pa
096	feather	*m̥ul
337	few	*toːm
149	finger	*kut.{daŋ}
150	fingernail	*kut.tin
212	fire	*mei
211	firewood	*t^hiŋ
101	fish	*ŋa
326	five	*ŋa
161	flesh	*sa.tak
287	flow	*luaŋ
044	flower	*paŋ.par
097	fly	*zuaŋ
116	fly	*t^ho
157	foot	*k^he.{p^ha}
157	foot	*k^ho.{p^ha}
123	forehead	*tsal
037	forest	*ram
253	forget	*ŋ̊il
325	four	*li
106	frog	*u
045	fruit	*t^hei
No.	**Gloss**	**Proto Chin**
270	ghost	*k^hra
077	gibbon	*{hu}
064	ginger	*t^hiːŋ
288	give	*peː
365	green	*r̥iŋ
299	grind	*rial
122	hair	*sam
430	half a quantity	*tsan
145	hand	*kut
387	hard	*Cak
256	hate	*hua
119	head	*luː
222	hear	*t^hei
141	heart	*luŋ
386	heavy	*rit

089	horn of buffalo	*kiː
382	hot	*lVC
186	house	*in
406	how many person	*zat
332	hundred	*za
264	hurt	*naː
176	husband	*ga
416	I (1s)	*kei.ma
107	insect	*luŋ
144	intestines	*ril
034	iron	*t^hir
418	it	*a.ma
266	itch	*t^hak
052	kapok	*paŋ
281	kick	*sui/pet
315	kill	*t^hat
154	knee	*k^huk
273	kneel	*k^huk.{din}
221	knife	*tsem
414	land leech	*got
244	laugh	*nuːi
293	launder	*sop
043	leaf	*t^hiŋ.n̥a
356	left side	*gei.lam
152	leg	*k^heː/k^hoː
242	lick	*liak
427	lift	*tsoi
056	liquor	*zuː
143	liver	*t^hin
No.	**Gloss**	**Proto Chin**
341	long	*sau
110	louse head	*r̥ik
142	lungs	*tsuap
169	man	*pa.mi
059	mango	*haːi
334	many	*tam
192	mat	*p^her
087	milk	*n̥u
076	monkey	*zoːŋ
003	moon	*k^hraː
014	morning	*ziŋ
207	mortar	*sum
114	mosquito	*kaːŋ
173	mother	*nu
035	mountain	*kraŋ
130	mouth	*kam

050	mushroom	*pa
182	name	*min
140	navel	*laːi
359	near	*n̥aːi
201	needle	*p^him
368	new	*t^har
012	night	*zan
330	nine	*kua
015	noon	*t$ʃ^h$un
021	north	*t$ʃ^h$ak.lam
127	nose	*n̥aːr
369	old	*l̥ui
322	one person	*k^hat
068	paddy rice	*sa
148	palm	*kut.p^ha
411	pangolin	*sa.p^hu
320	pay	*pia
171	person	*mi
208	pestle	*suk
085	pig	*gok
193	pillow	*k^ham
300	plant	*tsiŋ
079	porcupine	*sa.ku
205	pot cooking	*beːl
205	pot cooking	*am
305	pound rice	*su
166	pus	*n̥aːi
No.	**Gloss**	**Proto Chin**
166	pus	*n̥aːi
279	push	*nam
078	rabbit	*sa.{ge}
007	rain	*rua
080	rat	*zu
051	rattan	*r̥ui
364	red	*sen
067	red pepper	*{mal}.{Caː}
160	rib	*naːk.ru
410	rice seedling	*taŋ
355	right side	*{}.lam
409	ripe	*m̥in
184	road path	*lam
189	roof	*kruŋ
042	root	*t^hiŋ.{}
291	rub scrub	*noːt
132	saliva	*tsil

071	salt	*tsiː
030	sand	*{seː}
267	scratch	*k^{h}rut
025	sea	*tui.pi
224	see	*mu
318	sell	*zuar
328	seven	*sa.ri
200	sew	*k^{h}rui
011	shadow	*l̥im
384	sharp	*Cum
137	shave	*met
156	shin	*ŋal
268	shiver	*k^{h}rur
313	shoot	*kaːp
344	short height	*niam
342	short length	*toi
247	shout	*au
033	silver	*ŋuːn
250	sing	*la.sa
271	sit	*t^{h}uː
327	six	*ruk
163	skin	*gun
001	sky	*gaːn
261	sleep	*ip.mu
223	smell something	*nam
No.	**Gloss**	**Proto Chin**
214	smoke fire	*mei.k^{h}u
388	smooth	*naːl
113	snail	*tseŋ
102	snake	*rul
237	sneeze	*ha.tʃ^{h}ei
262	snore	*n̥ar
175	son in law	*maːk
175	son in law	*sa
375	sour	*t^{h}ur
022	south	*k^{h}raŋ.lam
220	spear	*sei
377	spicy hot	*t^{h}ak
108	spider	*mom
109	spider web	*mom.bu
235	spit	*tsil.tʃ^{h}ak
425	split with knife	*tsan
272	stand	*diŋ
004	star	*ar.si
321	steal	*ruː
029	stone	*luŋ

407	stream	*tui.ga
053	sugarcane	*su
002	sun	*ni
228	swallow	*dol
165	sweat	*k^{h}ran
374	sweet	*k^{h}rum
284	swim	*tui.zo
090	tail	*mei
423	take	*laː
343	tall	*saːŋ
331	ten	*r̥a
111	termite	*lei
361	that	*huaː
361	that	*k^{h}a
421	they	*an.ma
345	thick	*tʃ^{h}a
153	thigh	*p^{h}ei
346	thin	*pan
251	think	*ŋai.{tua}
231	thirsty	*tui.hal
360	this	*hi.hi
041	thorn	*l̥iŋ
417	thou (2s)	*naŋ.ma
417	thou (2s)	*ma
No.	**Gloss**	**Proto Chin**
324	three	*t^{h}um
010	thunder	*k^{h}o
289	tie	*{toːn}
073	tiger	*sa.kei
393	tired	*ba
131	tongue	*lei
133	tooth	*haː
134	tooth	*haː.niː
038	tree	*t^{h}iŋ.kuŋ
040	tree bark	*t^{h}iŋ.hoːŋ
104	turtle	*sum.k^{h}ok
323	two	*n̥i
168	urine	*zun
183	village	*k^{h}ua
234	vomit	*lua
257	wait	*ŋ̊aːk
274	walk	*lam.{CVC}
191	wall of house	*paŋ
432	warm	*lum
292	wash	*sil
023	water	*tui

413	water leech	*li:t
429	we (1p)	*kei.ma
196	weave cloth	*ta
No.	**Gloss**	**Proto Chin**
226	weep	*krap
020	west	*krak.lam
408	wet rice field	*lo
402	when past	*tik
403	where	*koi
403	where	*a
404	who	*hau
349	wide breadth	*kau
178	widow	*nu.mei
177	wife	*nu.pi:
188	window	*t^ho
095	wing	*k^hra
170	woman	*nu.mi
238	yawn	*ha:m
018	year	*kum
366	yellow	*Na:i
016	yesterday	*za:.ni
420	you (2p)	*nan.ma
180	yr. bro. of f.	*nau
440	yr. bro. of m	*nau.pa
441	yr. sister of f	*nau.nu
442	yr. sister of m	*nu

APPENDIX E

WORDLIST IN FULL SYLLABLE

The following table shows phonetic transcription of the wordlist of 443 vocabularies in full syllable.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi
1	sky	va:n˥˩	va:n˥˩	va:n˥˩	a˧va˧pi˥	ni˥ta˧va:n˧˥
2	sun	ni˧	ni:˥	ni:˥˩	ne:˧˥	n̥˧ñ̥i:˥
3	moon	kʰa:˥˩	tʰla:˥˩	tʰla˥˩pa˥	tʰla˧pa˥	tʰla:˧
No.	**Gloss**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**
4	star	ak˧si˥˩	ar˥si˥˩	ar˧fi:˧	o:˧si˥	a˧si:˥
5	cloud	me:i˧	tʃʰu:m˧˥	min˥mei˥˩	mei˧da˧	ta˧ma:i˧˥
6	mist	tui˧˥kʰu:˧˥	tiau˥tʃʰu:m˧˥	ti˥tʃʰum˧	mei˧tʰa:˧˥	ta˧mai˧bu?˥
7	rain	gua?˧	rua?˧	rua?˥pi˥˩	a˧va:˧˥sia˧˩	kʰu:˥
8	rainbow	sa˥kʰi˥gun˧kʰa:u˧	tʃʰim˥˩bal˧˥	tʃʰun˥˩tʃʰa:˥	ku˧ə˥r̥i˥˩	gui˥aŋ˧zen˧˥
9	lightning	kʰɔ˥pʰe:˧	kol˧˥pʰe:˥	mim˧tlau˧˩	lo˧la˥a˧d̥ʒ̥a˧kei?˧	l̥e˧sit˧
10	thunder	van˥˩giŋ˧	kʰo˥pui˥ ri:˥˩	kʰua˧ri:˥	to˧ka˧lo:˧a:˥tʰia?˧	taŋ˧pʰak˥
11	shadow	li:m˥˩	l̥im˥˩/tʰla˥	tʰla˧dem˥˩	a˧ne˧bu˧r̥i	mu˧tʰla:˥
12	night	za:n˥˩	za:n˥˩	zan˥˩	a˧ze˧	n̥˧du̱:n˥
13	day	ni˧	ni:˧˥/tʃʰun˥˩	tʃʰun˥˩	a˧va˧	ka˧ni:˧˥
14	morning	zi:ŋ˧saŋ˧	ziŋ˧˥lam˧	ziŋ˧ka:˧	mau˧di˥	n̥˧kʰoŋ˧mi˧
15	noon	su:n˥˩	tʃʰun˥˩lai˧	tʃʰun˥˩	nei˧tʃʰo?˧	ni˧aŋ˧hun˧˥
16	yesterday	za:˧ni˧	ni˧min˥a?˧	ni:˧zan˥	za:˧tʃʰa˧ne˧	zaŋ˧du̱:˥
17	morrow	ziŋ˧d̥ʒ̥iaŋ˥˩	nak˧tuk˥˩a?˧	tʰa:i˧ziŋ˧	mo˧la˥	n̥˧kʰon˥
18	year	kum˥˩	kum˥˩	kum˥˩	ko˧	sa˧niŋ˧˥
19	east	ni˥sua?˧na˧lam˧˥	tʃʰak˧lam˥	ni˧tʃʰua?˥lei˧	ne˥tʃʰi˧	ni˥ka˧si˧be
20	west	ni˥tum˥˩na˧lam˧˥	tʰlaŋ˥lam˥	ni˧tlak˧lei˧	ne˥tla˧	a˧ni˥dam˧b

21	north	sak˧lam˥	m̥al˥˩lam˧	tʃʰak˧lei˧	mo˧	ba˧si˧beŋ˥˩
22	south	kʰaŋ˧lam˥	tʃʰim˩˧lam˧	tʰlaŋ˧lei˧	tʃʰə˩	ba˧li˧beŋ˥˩
23	water	tu:i˥	tui˥	ti:˥	ti˥˩	tui˧
24	river	gu:n˧	lui˥˩	ti˧va˥˩	tsa˧va˩	tui˧pui˥˩/va˧
25	sea	tu:i˥pi˥	tui˧fin˧riat˥˩	ri˧li:˥˩	tsa˧va˩lai˩pi˩	paŋ˧le˧
26	earth/soil	lei˥	lei˧lung˧	vo˧lei˥˩	a˧lei˥˩	n̥˧l̥oŋ˧
27	mud	buan˧	diak˧	nɔn˧d̥z̥ek˧	d̥z̥o˧tlə˧	taŋ˧no˧
28	dust	lei˥vui˧	vai˧vut˩	lei˧vut˧	a˧lei˧pa˩di˧	bai˧pʰu:˧
29	stone	suaŋ˥/luŋ˥	luŋ˥	luŋ˥˩	a˧lo˧	n̥˧l̥oŋ˧
30	sand	se?˩nel˥	tiau˧	tʰa˧se:˧	sa˧di˧	si˧si˧i˧
31	lime	lei˥kaŋ˧	d̥z̥i˧nai˥˩	tʰuŋ˧	lei˧ra˩	tʰoŋ˧
32	gold	kʰam˥˩	raŋ˧ka˧d̥z̥ak˩	sui˧	si˥˩	sui˧
33	silver	ŋu:n˥˩	taŋ˩˧ka˩rua˧	ŋun˥˩	ŋo˥˩	taŋ˧ka˧
34	iron	sik˥	tʰir˥	tʰiar˧	tʰia˥˩	su:n˥
35	mountain	mual˧	tla:ŋ˧	tlaŋ˥˩	tla:˥˩	e˧mi:˥
No.	**Gloss**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**
36	cave	kʰu:l˧	pu:k˥˩	luŋ˧kua˧	lo˧kʰo˥˩	ta˧puk˧
37	forest	gam˧lak˧	ram˧ŋɔ:˧	tu˧pi˥˩/ram˥˩lak˩	ra˧ba˧r̥i˧pa˥˩	a˧tu:˥
38	tree	siŋ˥kuŋ˥	tʰiŋ˥kuŋ˥˩	tʰiŋ˧kuŋ˧	tʰo˧ko˧	tʰiŋ˧kuŋ˧
39	branch	siŋ˥hiaŋ˧	tʰiŋ˧zar˧	tʰiŋ˧ŋe:˧	tʰo˧d̥z̥e˩	taŋ˧beŋ˧
40	tree bark	siŋ˥hɔ:ŋ˧	tʰiŋ˧pil˥˩	tʰiŋ˧hɔ:ŋ˧	tʰo˧hau˧kua˧	tʰiŋ˧kei˧lei
41	thorn	liŋ˧	l̥i:ŋ˧	l̥iŋ˥˩	a˧l̥eo˩	a˧l̥iŋ˥
42	root	siŋ˥zuŋ˥	tʰiŋ˧zuŋ˥	tʰiŋ˧r̥əm˧	tʰei˧tʰa˧r̥i˧	tʰiŋ˧taŋ˧zu
43	leaf	siŋ˥te?˩ /na?˩	tʰiŋ˧n̥a?˩	tʰiŋ˧n̥a˧	tʰei˧n̥a˩	tʰiŋ˧gan˧
44	flower	pak˧	paŋ˧par˧	paŋ˧par˧	po:˧pi˧	a˧pao˧
45	fruit	siŋ˥ga?˩	tʰiŋ˧tʰe:i˥	tʰiŋ˧tʰei˧	tʰei˧tʰei˩	a˧tʰa:i˧
46	seed	a˩taŋ˥	tʰlai˩˧d̥z̥i:˥˩	tʰlai˥˩d̥z̥i:˧	a˧m̥o˧	a˧mu:˧
47	grass	lo˧pa˥	n̥im˥˩	bel?˩	si:n˧n̥a˩	a˧sak˧pra˧
48	bamboo	gua˧	rua˧/mau˧	rua˥˩	ra˧mo˩	ɣu:˧
49	bamboo shoot	gɔ˧tuai˧	rɔ˧tuai˧	tuai˥˩	ra˧mo˩te˧	aŋ˧tui˥an˧
50	mushroom	pa˥	pa:˥	pa˧par˧	tsi˧tlo˧po˩	kʰui˧pa˧pol
51	rattan	d̥z̥i:ŋ˥	r̥ui˧zik˥˩	r̥i˧pʰi˧	a˧ri˧	ɣui˧
52	kapok	paŋ˧pat˧	pa:ŋ˧la˩		a˧pʰa˧	le˧mɔk˧
53	sugarcane	kɔl˧tu˧	fu:˧	fu:˥˩	be˧su˧tlai˧	pa˧sik˧
54	betelnut	kun˥˩ga?˩	ku:˥˩va˩ra?˩	kun˧tʰei˥˩	ku˧va˧tʰei˧	kɔŋ˧tʰai˧
55	opium	beŋ˥˩	ka:˧ni˧	biŋ˧	bi:˥˩	biŋ˩
56	liquor	zu:˧	zu:˧	zu:˥˩	sa˧m̥a˧	rau?˩
57	banana	ban˥˩la˥	ban˥˩l̥a:˥	ban˧l̥a˧	ba:˧l̥a˧	to˧ki˧tʰai˥
58	papaya	nu˥nun˥˩	n̥u˧n̥un˥˩	sa:ŋ˧pʰɔ˥˩	tʰɔ˧ba˧l̥a˧tʰei˥˩	saŋ˧pʰɔ˩la˧
59	mango	ha:i˧	tʰei˩˧ha:i˧	ha:i˥˩	hai˧tʰei˩	ka˧pʰɔk˧tʰa
60	jackfruit	siŋ˥pi˥	lam˩˧kʰuaŋ˧	n̥u˧n̥un˧	a:˧i:˧tʰei˥˩	pa˧nai˧tʰai
61	coconut	ɔŋ˥˩ga?˩	na?˩rial˧	uŋ˧tʰei˥˩		oŋ˧si˧tʰai?˩
62	eggplant	bɔk˧bɔ:n˥˩	bɔk˧bɔ:n˩˧	bɔn˧bɔk˧	sa˧zai˧tʰei˥˩	min˧tɔk˥˩tʰa
63	peanut	mɔ:ŋ˧pʰa˧li˧	ba˩dam˥˩	me˩pe:˧	pe:˩	pi˧dɔŋ˧
64	ginger	si:ŋ˧	sɔ?˩tʰiŋ˧	ai˧tʰiŋ˩	e˧sei˩	ka˧siŋ˥
65	garlic	lɔu˧tʰaŋ˧ka:ŋ˧	pu˧run˧val˧	kʰa:˧tʃʰuan˧	va:˧kʰɔ:˥ra˧	mi˧jɔk˧ka˧t
66	corn	vai˧mim˧	vai˧mim˧	fuŋ˧vɔi˧	tʃʰa:˩˧mei˥˩	m̥˧ku:n˧

67	red pepper	za˧san˧	mar˥ʤa:˩˧	m̥an˧pʰek˥	a˥he˧	mai˧gun˥tʰ
No.	**Gloss**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**
68	paddy rice	bu?˧hu:m˩˧	bu?˧	fa˧ʤaŋ˩˧	sa:˩˧	saŋ˧ni:˥
69	cooked rice	bu?˧	ʤɔ:˩˧	bu?˧	pa˧ti:˩˧	bu?˧
70	pounded rice	bu?˧taŋ˧	bu?˧fa:i˧	fa˧ʤaŋ˩˧	sa˧ʤa˧pa:˩	tsaŋ˧
71	salt	ʤi:˩˧	ʤi:˩	ʤi˧te˩˧	a˧lo:˧	pa˧lɔi˥
72	animal	gam˧sa˧	ran˥sa:˧	sa˧ram˩˧	sa˧ra:˧no˥	ui˧o?˧a˧
73	tiger	sa˧haŋ˧	sa˧kei˥	pɔ:˧pi:˩˧	ʤa˧kei˧	ta˧kai˧
74	bear	vɔm˧	sa˧vɔm˥	vɔm˩˧	ʤa˧vau˧	ta˧vɔn˧
75	deer	sa˥zuk˩˧	sa˧kʰi:˥	sa˥kʰi:˧	zu˧nai˧	sa˥suk˧
76	monkey	zɔ:ŋ˧	zɔ:ŋ˥	zɔ:ŋ˩˧	a˥zau˧	ka˧lai˥
77	gibbon	ŋa:u˧	hau˩˧huk˧	hu˧ho˥	vei˥tu˧	jɔŋ˧ha˥
78	rabbit	bil˧pi˧	sa˧bek˧	sa˧ve˧	sa˧ve˧	jɔŋ˧
79	porcupine	sa˥ku?˧	sa˧ku?˧	sa˧ku?˧	so˧ku˧	si˥pi˧hi˥
80	rat	zu˧	sa˧zu˩˧	zu:˧	pa˧zu˥	pi˧ju˥
81	dog	ui˧	ui˧	ui˩˧ʤau˧	i:˩˧	ui˧
82	bark	nak˧	a˥bau˧	a˧bou˧	a˥sa:˧	n̥˧nak˧
83	bite	pet˧	a˥se?˧	a˧se?˥	a˥ʤai˧	kei?˧
84	cat	zɔ?˧ŋeu˧	zɔ?˧te˧	tʃʰi˧zɔ?˥	zɔ:˧ka˧	miŋ˥boi˧
85	pig	vɔ:k˧	vɔk˧	vɔk˧	vɔ˧	ɔ:k˧
86	cow	bɔ:ŋ˧	bɔ:ŋ˩˧	ʤɔ:˧	ʤɔ:˥	mai˧to˥
87	milk	nɔ:i˧	bɔ:ŋ˩n̥u˧te:˧	ʤɔ:˧n̥uk˧	ve˧ʤuŋ˥n̥o˩˧	mai˧to˥a˧n̥u
88	buffalo	lɔ:i˧	lɔi˧	na:˧	no:˥	pa˧na:˧
89	horn of (buffalo	ki:˧	lɔi˧ki:˩˧	ki:˧	no˥ki˩˧	pa˧na:˥a˧ki
90	tail	mei˧	a˧mei˧	a˧mei˩˧	a˧ʤu˥la˧m̥ei˧	ta˥mai˥
91	elephant	sai:˧	sa:i˧	vui˩˧	ma˧se:˧	ka˧sai˧
92	elephant tusk	sai˧ha˧	sai˧ŋo˩˧	vui˧hou˥	ma˧se:˧no˧	ka˧sai˧a˧nɔ
93	bird	va˥sa˧	sa˧va˩˧	va:˥	pa˧vo˥	ta˧va˧
94	bird's nest	va˥sa˥bu˧	sa˧va˧bu:˩˧	va˧bu˥	pa˧vo˥bu˧	ta˧va˧a˧bu˥
95	wing	kʰa˩˧	a˥tʰla:˩˧	va˧tʰla:˥	a˧ma˧tʰlo˧	a˧pa˥l̥i:˧
96	feather	mul˧	sa˧va˧m̥ul˧	va˧m̥ul˧	pa˧vo˥a˧m̥i˩˧	ta˧va˧a˧mu
97	fly	le:ŋ˧/zuaŋ˧	a˥tʰlɔ:k˩˧	a˧zuaŋ˥	pa˧vo˥a˧zo˧	aŋ˧təŋ˥
98	egg	tu:i˧	tui˥	ar˧ti˥	pa˧vo˥a˧ti˧	ta˧tui˧
99	chicken	ak˧	a:r˥	a:r˩˧	o:˧θo˥θo˩˧	a:˧
No.	**Gloss**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**
100	duck	va˥tɔ:t˩˧	va˧rak˧	ʤɔm˩˧pei˩˧	tau˧pʰau˩	lum˧pai˥
101	fish	ŋa˧sa˧	sa˧ŋ̊a:˩˧	ŋa:˧	ŋa˥	ta˧ŋa:˥
102	snake	gul˧	ru:l˥	rul˩˧	pa˧ri˧	pu˧ɣi˥
103	houselizard	in˧hik˧	baŋ˥tʃʰai˩˧dai˩˧dep˥	ʈe:k˩˧ral˧	ə:˧ri˧ha˧pa˩˧	dɔk˧l̥ek˥
104	turtle	sum˧kuaŋ˧	sa˧tel˩˧	tʃʰuŋ˥ku˧	sɔ˧la˧kei˧	te˥pa˥gu:˥
105	crocodile	ɔ˧le˧	ɔ˧le:˥	ti:˧sal˥tlam˩˧	ti˥sa˥da˧va˩˧	tui˧n̥an˧
106	frog	ui˧pʰuk˩˧	ut˥ʤaŋ˥	u˥tlak˧	ʤa˧u˥	ui˥pʰo?˧
107	insect	luŋ˧nɔu˧	tʰil˥ɾik˧	ruŋ˧rul˧	a˧lo˥a˧e˥pa˥	ta˧luŋ˥
108	spider	mɔm˧mai˧	mai˧mɔm˩˧	sɔm˧pa˧lak˥	zau˧tɔn˧	pun˧pa˧ha:˩
109	spiderweb	mɔm˧mai˧in˧	mai˧mɔm˩˧ril˥	sɔm˧pa˧lak˥bu˥	zau˧tɔn˧bu˥	pun˧pa˧ha˧
110	lousehead	hik˧	lu˥ɾik˧	ɾik˧	a˧ɾi˧	e˧hik˧
111	termite	lei˧kʰa˧	tʰiŋ˧ŋet˩˧	ʈuaŋ˧ʈuan˧	lei˥sʃʰo:˥	kʰa˧ra˧
112	cockroach	in˧lɔi˩˧	ʤuk˧ʤu:˩˧	pʰi˧l̥ik˥	ʤo˧ka˧ka˧li˥	tʰlaŋ˧kʰo˥

113	snail	tɔk˧˥tɔl˧	ʤeŋ˥˩kɔl˩	ʤaŋ˧˥ka˧˥reo˧˩	ʤa:˧˥ka˧˥ru:˥	ten˧˥ba:˥
114	mosquito	t^{h}o˥˩ka:ŋ˩	t^{h}o˥˩ka:ŋ˥	fik˧˥fa:˧	ma˧˥t^{h}a:˥	saŋ˧˥kaŋ˥
115	bee	k^{h}uai˧	k^{h}uai˥	k^{h}uei˥˩	k^{h}ei˧˩	k^{h}ɔi˩
116	fly	t^{h}o˥˩	t^{h}o:˥˩	t^{h}ao˥˩	ma˧˥t^{h}o˧˩	teŋ˧˥si:˥
117	butterfly	ka:u˥˩	p^{h}e:ŋ˩/p^{h}e˧˥lep˧˩	pa˧˥lep˧˩	ʤa:˧˥ba˧˥lie˧˩	p^{h}ɔ˥ʨe:˥
118	scorpion	a:i˩/kam˧˥	k^{h}ɔ˧˥mual˥˧kai˩/kuaŋ˥˧tlaŋ˧˥kiŋ˧˥kual˥˧			pui˧˥pa˧˥siŋ˥
119	head	lu:˧˥	lu:˥	lu:˥˩	e˥˧ma˧˥lu:˧˥	a˧˥lu:˩
120	face	mai˩	ma:i˩	ma:i˥˩	e˥˧me˥˩li˥	mi˧˥mai˥
121	brain	k^{h}uak˩	t^{h}luak˥˩	t^{h}luak˧˥	e˥˧ma˧˥ra˧˥li˥˧t^{h}li˥	a˧˥lu˧˥a˧˥ho˧˥
122	hair	sam˩	sam˩	sam˥˩	e˥˧ma˧˥sa:˧˥pho˥	a˧˥sa:n˥
123	forehead	tal˥˩	ʤal˥˩	ʤal˥˩	e˥˧ma˧˥k^{h}i˧˥pa˧˥	lu˧˥peŋ˥
124	eyebrow	mit˧˥k^{h}u˥˩	mit˧˥ko:˥	mit˧˥tlaŋ˥˩	e˥˧ma˧˥tla˧˩	mik˧˥k^{h}ʉ:n˥
125	eye	mit˧˩	mit˧˩	mit˧˩	e˥˧ma˧˥k^{h}ɔ˧˥	e˧˥mek˧˩
126	eyelid	mit˧˥vun˩	mit˧˥ʤin˥˩	mit˧˥ʤuar˥˩	e˥˧ma˧˥vɵ˥ek˥	e˧˥mek˧˥teŋ˥
127	nose	na:k˥˩	ŋar˥	ŋa:r˥˩	e˥˧ma˧˥ŋa˧˥k^{h}u˧˥	na˥˧ɣoŋ˥
128	cheek	bia:ŋ˧˥	biaŋ˥	biaŋ˥˩	e˥˧ma˧˥bai˧˥k^{h}ai˧˥	taŋ˧˥be:˧˩
129	ear	bil˩	beŋ˥	ŋa˥k^{h}ɔ:˧˥	e˥˧ma˧˥na˧˥kɔ˥	ka˥˧ŋa:˥
130	mouth	kam˧˥	ka:˥	ka:˥˩	e˥˧ma˧˥mɔ˧˥tau˥	pa˧˥ŋi:˥
131	tongue	le:i˧˥	lei˥	lei˥˩	e˥˧ma˧˥pa˥lei˧˩	pa˧˥lai˧˥
No.	**Gloss**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**
132	saliva	ʤil˧˥	ʤil˥˧t^{h}li˥˩	ʤi:l˥˩	e˥˧ma˧˥pa˥ʤi˧˩	a˧˥ha˧˥moi˥
133	tooth	ha:˧˥	ha:˥	ha:˥˩	e˥˧ma˧˥ha˧˩	a˧˥ha:˧˩
134	gums	ha˥˧ni˩	ha:˥˧ni:˥˩	ha˧˥ni:˧˥	e˥˧ma˧˥pa˥˧nei˧˥	a˧˥ha˧˥k^{h}un˥˩
135	chin	k^{h}a:˩	k^{h}a˧˥be˥˩	k^{h}a˧˥be˧˥	em˥˧ka˧˥dia˧˩	baŋ˧˥hi˥˧a˧˥m
136	beard	k^{h}a˥˧mul˩	k^{h}a˧˩be˧˥mʊl˩	k^{h}a˧˩mʊl˥˩	ei˥˧mo˧˥mʊi˥˩	moŋ˧˥mui˥
137	shave	met˩	k^{h}a˧˩be˧˥mʊl˩/met˥˩	i˧˥me?˥	mo˧˥mi˥˧a˧˥ho:˧˩pa˧˥	moŋ˧˥mui˧˥a
138	back	ŋuŋ˧˥za:ŋ˧˥	nuŋ˩zaŋ˥	ke:ŋ˥˩	e˥˧ma˧˥kao˧˥	a˧˥nam˧˥krɔŋ
139	belly	pi˩	dul˥˩/pum˥˩	po:˥˩	e˥˧ma˧˥pa˥vao˧˩	a˧˥jɔk˥
140	navel	la:i˧˥	la:i˩/pɔŋ˥˩	la:i˥˩	em˥˧pa˥˧le˧˥so˧˩	tsai˧˥luŋ˥
141	heart	luŋ˧˥	luŋ˥	luŋ˧˥t^{h}in˥	em˥˧lo˥˧ta˧˥pao˥	pa˧˥luŋ˥
142	lungs	tuap˩	ʤuap˥˩	ʤuap˧˥	em˥˧pa˥ʤo˥˩	pa˧˥to:˥
143	liver	sin˥˩	t^{h}in˧˩	t^{h}in˥˩	em˥˧pa˧˥t^{h}i˧˥	a˧˥pa˧˥t^{h}in˧˥
144	intestines	gil˧˥	ril˥	ril˥˩	e˥˧ma˧˥ri˧˥pi˥˩	a˧˥da˧˥ɣi˥
145	hand	k^{h}ut˧˩	kut˧˩	kut˥	e˥˧ma˧˥ku˧˩	a˧˥ban˩
146	elbow	kiu˥˩	kiu˥˩	kiu˥˩	e˥˧ma˧˥ʤa˧˥k^{h}i˧˥	a˧˥ban˧˥ta˧˥k^{h}
147	armpit	le˥˧nuai˩/zak˧˩	zak˧˩	zak˧˥taŋ˧˥	e˥˧ma˧˥ba˧˥ka˧˥le˧˥	ka˧˥jak˥
148	palm	k^{h}ut˧˥pek˩	kut˧˥p^{h}a?˧˩	za˧˥pei˥˩	im˥˧ku˥˧pa˧˥za˧˥	a˧˥ban˧˥ba˧˥d
149	finger	k^{h}ut˧˥me˧˥	kut˧˥daŋ˥	kut˧˥dɔŋ˧˥	im˥˧ku˥˧dɵ˧˥	a˧˥ban˧˥pi˧˥jɔ
150	finger nail	k^{h}ut˧˥ʤin˩	kut˧˥tin˩	tin˥˩	im˥˧ku˥˧te˥	a˧˥ban˧˥pa˧˥si
151	buttocks	tɔ˥˧bou˩	mɔŋ˥˩tam˧˩	tɔ˧˥ʤor˧˥	e˥˧ma˧˥ʤai˥	le˧˥k^{h}ua˧˥ta˧˥
152	leg	k^{h}e:˥˩	ke:˥˩	ke:˥˩	em˥˧p^{h}ei˧˥kai˥	a˧˥k^{h}ɔk˩
153	thigh	p^{h}ei˥˩	mal˥˩	p^{h}ei˥˩	em˥˧tl̥o˧˥pau˥	a˧˥p^{h}ai?˧˩
154	knee	k^{h}uk˩	k^{h}u:p˥˩	k^{h}uk˧˩	em˥˧pa˥k^{h}u˥	k^{h}uk˧˥k^{h}u˥
155	calf	tan˧˥	ʤɔ:n˥˩	ten˧˥por˥˧	em˥˧bo˧˥lo˥	a˧˥k^{h}u˧˥mui˥˧
156	shin	ŋal˧˥	ŋal˥	ŋal˧˥ʤar˧˥	em˥˧p^{h}ei˧˥pa˧˥za˧˩	a˧˥k^{h}u˧˥bu˧˥k
157	foot	k^{h}e:˥˩bɔm˩	ke:˧˥t^{h}ia?˧˩		em˥˧p^{h}ei˧˥za˥˩	a˧˥k^{h}u˧˥pin˧˥p
158	heel	za˥˧tu:l˧˥	ke:˧˥ar˥˧tui˥	ke˧˥dir˧˥	em˥˧ŋa˧˥ha˥˧mu˧˥tau˥	a˧˥k^{h}u˧˥mʊ?˥

159	bone	guʔ˩	ruʔ˩	ruʔ˩	e˥ma˩ru˩pa˥	a˩hu˩
160	rib	nak˧˩guʔ˩	nak˨˩ruʔ˩	nak˩ruʔ˩	im˥ka˥ru˩	pa˩nak˥
161	flesh	sa˥tak˩	tiː˨˩sa˨˩	tak˩sa˩	e˥ma˩sa˩pa˩	a˩mui˥
162	fat	tʰaːu˨˩	tʰau˨˩	tʰaːu˨˩	e˥ma˩tʰau˩	a˩tʰau˩
163	skin	vun˧˩	vun˧˩	ʤuar˨˩	e˥ma˩va˥ko˩	a˩ŋan˩hin˥
No.	**Gloss**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**
164	blood	si˧˩	tʰi˥sen˥	tʰiː˨˩	e˥ma˩tʰiː˨˩	a˩tʰiː˧˩
165	sweat	kʰɔ˥ʔul˩	tʰlan˨˩	tʰlan˨˩	e˥ma˩tʰlai˩	aŋ˩sa˩tui˥
166	pus	naːi˩	pan˥n̥aːi˥	n̥aːi˨˩	e˥ma˩ma˩a˩n̥e˩	a˩n̥aːi˧˩
167	excrement	eːk˧˩	eːk˨˩	eːk˩	e˥ma˩ieː˥	ke˩iʔ˩
168	urine	zun˩	zun˨˩	zun˨˩	e˥ma˩zo˩	pa˩jun˩tui˥
169	man	pa˩sal˧˩	mi˩pa˨˩	miː˩pa˥	ʤa˩po˥	mi˥toŋ˩za˥
170	woman	nu˩mei˨˩	mei˨˩ʤia˨˩	mi˩nu˥	ʤa˩no˥	moŋ˩mi˥za
171	person	mi˥hiŋ˩	mi˩n̥iŋ˥	miː˩	ʤo˥sa˥	kʰu˩miː˥
172	father	pa˧˩	paː˨˩	ka˩paː˨˩	im˥pɔ˥	aŋ˩pa˩
173	mother	nu˧˩	nuː˨˩	ka˩nuː˨˩	em˥nɔ˥	a˩nuː˩
174	child	nau˩paŋ˧˩	nau˥paŋ˧˩	ŋak˨˩tʃʰia˩	hɔː˥ti˨˩	a˩sa˩n̥u˩di˩
175	son in law	maːk˧˩	mak˨˩pa˨˩	fa˩pa˥	sa˩ma˩va˩	muk˩saː˥
176	husband	pa˩sal˧˩	pa˩sal˥	vaː˨˩	e˥ma˩va˩pa˨˩	a˩sa˩va˥
177	wife	ziː˩	nu˩pui˥	nu˩piː˩	e˥ma˩la˩pi˩no˥	a˩juː˩
178	widow	mei˨˩gɔŋ˧˩	mei˨˩tʰai˥	nu˩m̥ei˥	no˥l̥ei˩	in˩reŋ˧˩
179	bro elder of f	uː˩	uː˥	ka˩t̪a˨˩		an˥ja˥ka˩sɔ
180	bro yr of f	naːu˩	nau˥	ka˩t̪a˩		an˥ja˥ka˩na
181	friend	lɔːm˩	tʰian˨˩	hɔi˩kɔm˥	vie˥sa˨˩	kaŋ˩pui˧˩
182	name	min˩	miŋ˥	min˨˩	em˥mo˩	a˩m̥in˧˩
183	village	kʰua˩	kʰua˥	kʰua˨˩	kʰiː˩	a˩vaːŋ˥
184	road/path	lam˧˩	kɔŋ˥	lam˨˩	laː˥pi˨˩	a˩lan˩
185	boat	gun˩kuaːŋ˩	tai˨˩kuaŋ˥lɔŋ˩	lɔːŋ˨˩	ba˩lau˩	pa˩lɔŋ˧˩
186	house	in˧˩	in˧˩	in˨˩	ɵʔ˥	in˧˩
187	door	kɔŋ˩	kɔŋ˥kʰar˨˩	in˩kaː˩	ɵʔ˥tʃʰiˀ˥	kʰaŋ˩ma˥
188	window	tɔː˩let˥	tuk˩ver?˩	tʰla˨˩laŋ˩ɔŋ˩	tʰla˩la˩o˩	tʰɔ˥bun˥
189	roof	in˧˩kʰum˨˩/in˧˩tuŋ˧˩	in˩ʤuŋ˧˩	in˩ʤuŋ˩	a˩va˥pʰu˩	im˩pʰuː˥
190	area under hous	in˧˩nuai˧˩	in˩nuai˧˩	in˩taŋ˩	ɵʔ˥rau˥	in˩lu˩kui˥
191	wall of house	in˧˩kɔːm˩	van˨˩paŋ˧˩	van˨˩paŋ˩	a˥baː˥	in˩paŋ˧˩
192	mat	pʰek˩	pʰer˥	pʰer˨˩	a˥pʰie˩	pʰak˩
193	pillow	lu˥kʰam˨˩	lu˥kʰam˨˩	tʃʰan˨˩tliŋ˩	lo˥hia˩	lu˩kəŋ˥
194	blanket	zan˨˩puan˧˩	puan˧˩	puan˨˩	pɵː˩	ka˩n̥iː˨˩
195	clothing	puan˧˩	tʰɔm˨˩n̥ɔ˨˩	tʰil˩puan˥	ʤaɔ˥sie˥	lai˥hɔ˥

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi
196	weave cloth	ga:n˥	a˧ta?˥	a˧ta?˥	tʰai˧a˥sa˥	a˧kɔŋ˥
197	dye cloth	nim˥	rɔŋ˥a˥nɔi?˧	si˧bur?˧	a˥rɔ:˧a˥na˥	a˧jɔŋ˧a˧sɔ˥
198	sarong	puan˧te:n˥	puan˧fen˥	n̥i:˧	n̥e˧ra˧	lɔŋ˧ki˥
199	trousers	pʰei˥tuam˥	ke˧kɔl˧tlɔn˥	bɔŋ˧bi˥sau˥	ta˥ɻo˧	pʰɔŋ˧pʰi˥
200	sew	kʰu:i˧	tʰui˥	ʈʰit˧	kʰo˥a˧bie˧	a˧kʰɔk˧
201	needle	pʰim˧	ɻio˥	ʈʰim˥	ʤe:˧pʰo˧	ai˧
202	comb	sam˧si?˧	sam˥kʰui?˧	sam˧tʰi?˥	sa˥tʰi˧	pa˧tʰi:˥
203	ring finger	zuŋ˧bul?˧	zuŋ˧bun˥	kut˧dɔŋ˧ɻɔ?˥	ku:˧se˥di˧	le˧suei˧
204	paper	lai˥dal˧	le?˧kʰa˧puan˧	ʤa:˧kʰu˥	ʤa˥n̥a˧	sa˧gan˥
205	pot cooking	be:l˧	be:l˥	um˥	bei˧	l̥a˧on˥
206	coconut shell		fian˥pui˧		ti:˥pʰe˧	oŋ˧si˧kʰot˥
207	mortar	sum˧	sum˧	mak˧pʰek˧sum˥	a˥he˧ʤe˧ra˧nu˥so˧	sun˥tsa˧
208	pestle	suk˧	dze˧rɔt˧luŋ˥	sum˧kʰal˥	ka:˧to˧	ma˧gən˧a˧
209	spoon	sik˧keu˧	fian˥	da:r˧keo˥	pʰe:˧tʰla˥	su:i˥
210	plate	pa˧ka:n˧	tʰle:ŋ˥	pa˧ka:n˧	pa˧ka:˥	pa˧keŋ˥
211	firewood	siŋ˧	tua?˧tʰiŋ˧	ti?˧tʰiŋ˥	tʰei˥	tʰiŋ˧
212	fire	mei˧	mei˧	mei˥	mei˥	m̥ai˥
213	ashes	vut˧	mei˥vap˧	vut˧ʤam˥	bu˧ʤa˨	bai˧pʰu:˥
214	smoke of fire	mei˧kʰu˧	mei˧kʰu:˥	mei˧kʰu:˥	mei˥kʰu˧	mai˧kʰʉ˥
215	candle	kʰuai˧mei˧	bɔm˥ba˥ti:˥	pʰe˧jɔ:ŋ˥daiŋ˥	kʰe˧lɔ˧me˥sa˧	pʰa˧jɔŋ˧dai
216	drum	kʰuaŋ˧	kʰuaŋ˥	kʰuaŋ˥	kʰɵ:˥	a˧to:n˥
217	gong	za:m˥	dal˥kʰuaŋ˥	bɔŋ˧bɔŋ˥	do˧kʰɵ˧	tən˥ga˧sa:o
218	bow crossbow	tʰal˧	sai˧ru˧kʰer?˧	ni:˥kuk˥	ʤa:˧tai˥li:˥	li:˥
219	arrow	tʰal˧taŋ˧	tʰal˧	tʰal˥	ʤa:˧tai˥	la˥
220	spear	tei˧pa:k˥	fei˧	fei˥	a˥sei˥	ta˧ri:˥
221	knife	tem˧	ʤem˥	na:m˥	ta˧ko˧	hai˧keik˧
222	hear	za:˧	a˧ɻia˥	a˧tʰei˥	a˥tʰei˧	tʰa:i˧
223	smell something	nam˧za:˧	rim˥ɻia˧	a˧n̥im˧	a˥rɵ˧a˧tʰei˧	a˥pa˧n̥ə:n˥
224	see	mu˥	a˥m̥u:˧	a˧m̥u?˥	a˧m̥o˧	a˧n̥ok˥
225	wink	mit˧pʰia˧	mit˧siai˥	a˧tʰe?˥	a˥mo˥a˧tʰau˥	a˧kʰen˥
226	weep	kap˧	a˥ʈap˧	a˧ʈap˧	a˥ʤia˧	a˧ɣa˧
227	eat	ne˧	a˧ei˥	a˧ei˥	a˥ni˧	a˧sak˥
No.	**Gloss**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**
228	swallow	val?˥	a˥lem˥/a˥dol?˧	a˧lem˥/a˧dol?˧	a˥pa˥dau˧	a˧pi˧i:˥
229	hungry	gil˧kial˧	a˧ril˥tam˥	a˧pɔ˧ʈam˥	a˧na:˧di˧	a˧jɔk˧aŋ˥l̥a
230	full	gil˧va?˧	a˧pual˥	a˧pɔ:˧kʰim˧	a˧ri˧a˧bie˥	a˧jɔk˧a˧kɔi
231	thirsty	daŋ˧ta:k˧	a˧tui˥a˧ha:l˧	a˧ti:˧hal˥	a˧da:˧a˧pʰi˥	tui˥aŋ˧he?˧
232	drink	dɔ:n˧	a˧in˥	a˧din˥	ti˥a˥dɵ˧	a˧ne:?˥
233	drunk	zu˧kʰam˧/gui˥	a˥rui˥	a˧ri˥	sa˧ma:˥pa˧ri˧	rauk˧a˧ba˧
234	vomit	lua˥	a˥luak˥	a˧luak˧	a˥pa˧li˥	a˧pa˧lɔk˧
235	spit	ʤil˧sia˧	ʤil˥a˥ʧʰak˧	ʤil˧ʧa:k˧	a˥pa˧ʤi:˧a˥pa˧ʧʰɔ˥	pa˧sui˧tui˥a
236	cough	kʰu?˧	a˥kʰu?˧	a˧kʰu?˥	kʰɔ˧ro˥a˥so˧	taŋ˧kʰu:˧
237	sneeze	hek˥ʧei˥	a˧ha˥ʧʰiao˥	a˧hat˧tʰiu˧	a˥n̥a˧a˧n̥e˥	na:˧a˧n̥ik˥
238	yawn	ha:m˥	a˥ham˥	ham˥ham˧	a˥pa˧ha˧	a˧pa˧ha:n˧
239	breathe	na:k˧	a˥tʰɔ:˥	tʰɔ˧dɔp˧	a˥hu˧a˧se˥	a˥ka˧ha:˧
240	whistle	hu:m˧hu:t˧	a˧fai˧fu˥	fi˧fit˥tum˥	a˧hu˧a˥pa˧hi˥	a˥taŋ˧sui˧
241	suck	tɔ:p˧	a˧hi:p˧	a˧dɔp˧	a˧sau˧	a˧pa˧jo:˧

242	lick	liak˥	a˧liak˩	a˧liak˩	a˧pa˧lie˧	a˧pa˧le:k˥
243	smile	nui?˩mai˥	a˧sei˧	a˧pən˧	a˧me:˧pʰuam˧pʰa˧sa˧	a˧pa˧n̥ui˧
244	laugh	nu:i˧	a˧nui˥	a˧ni:˧	a˧pa˧n̥i˧	a˧pa˧n̥ui˧to
245	speak	pau˧	a˧tɔŋ˩	bia˧tʃʰim˩	bia˨a˧re˧	a˧lo:˧a˧pe:t
246	tell	ge:n˥	a˧soi˥	a˧tʃʰim˧	a˧tʃʰə:˨	a˧tʰui˧
247	shout	ɔ:ŋ˩	a˧au˥	a˧au˩	a˧ɔ:˧	a˧ha:ŋ˧
248	answer	dɔ:ŋ˧	a˧tʃʰa:ŋ˧	a˧pʰit˧	a˧tʃʰau˨	a˧pʰie˥
249	liefib	kʰe:m˥	a˧bum˧	a˧l̥en˧	a˧hə˧	a˧leiŋ˧
250	sing	la˥sa˩	a˧za:i˥	l̥a:˧a˧sa˧	l̥a:˧a˧sa˧	l̥a˧a˧sak˧
251	think	ŋai?˧sun˩	a˧ŋai?˧tua?˧	i˧rua?˧	a˧pa˧d̥z̥a:˧	a˧də:n˧
252	know	tʰei˩	a˧r̥ia˩	tʰei?˧	a˧pa˧n̥e˧	a˧po˧no:˧
253	forget	maŋ˥ŋil?˧	a˧tʰei˧ŋ̊il?˧	pʰil?˧	a˧mau˧	a˧pa˧n̥e:˧
254	choose	te:l˧	a˧tʰlaŋ˧	tʰim˩	a˧tlau˧	a˧ɣʉ:˧
255	love	it˥	a˧m̥a˧ŋai?˧	dɔ:t˧	a˧kʰə˧	a˧ŋa:i˧
256	hate	hua˥	a˧hua˥	huat˧	a:˧hɔ:˧	nu˧m̥a˧
257	wait	ŋak˥	a˧ŋa:k˩	ŋa?˧	a˧ha:˧	a˧ɣi:ŋ˥
258	count	sim˧	a˧tʃʰiar˧	rel˩	a˧pa˧ki:˧	a˧pa˧ti:˧
259	afraid	la:u˥	a˧l̥au˥	ti?˧	a˧d̥z̥i:˧	a˧ɣe:i˧
No.	**Gloss**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**
260	angry	he?˧	a˧tʰin˧rim˩	tʰin˩hun˧	-	mua˧na˧
261	sleep/lie	i˧mu˧	a˧mu:˧	i˧	a:˧mɔ˧	i˧i:˧
262	snore	na:k˩sia˥	a˧n̥ar˧	sik˧	a˧r̥a˧nɔ˧	a˧hɔk˧
263	dream	maŋ˥man˩	maŋ˥a˧nei˩	maŋ˧man˧	a˧ma:˧a˧sa˧	a˧maŋ˧a˧m
264	hurt	na:˧	a˧na:˧	fa˧ter˩	a˧pa˧sa˩	a˧na:˥
265	medicine	za:˧	dam˩dɔi˩	si:˧	si:˧	ta˧si:˧
266	itch	tʰak˧	a˧tʰak˧	a˧tʰak˧	a˧pa˧tʰa:˧	a˧pa˧tʰa:k˥
267	scratch	kʰuat˥	a˧hiat˩	i˧kʰeu?˧	a˧kʰɔ:˧	a˧suei?˧
268	shiver	li:ŋ˥	a˧kʰur˩	tʰa˧tʰer˧	a˧d̥z̥a˧tʰe˧	a˧ŋə:n˧
269	die	si:˧	a˧tʰi:˧	tʰi˧	a˧tʰi:˧	du:k˧
270	ghost	si˧kʰa˧	ram˧huai˧	mu˧tʰla˩	a˧tʰlɔ:˧	ta˧ɣɔ:k˧
271	sit	tu˧	a˧t̪ʰu:˧	tʰut˧	a˧tɔ˧	a˧n̥i:˧
272	stand	diŋ˧	a˧diŋ˧	diar˩	a˧dia˧	aŋ˧dɔ:˧
273	kneel	kʰuk˥din˩	a˧tʰiŋ˧tʰi:˧	kʰuk˧bil˧	pa˧kʰua˧pa˧nai˧	kʰuk˧kʰuk˧
274	walk	lam˥pai˧	a˧kal˧	lam˧len˩	la:˧sia˧	a˧lan˧laŋ˧ke
275	crawl	bɔk˧vak˩	a˧bɔk˧vak˩	a˧lɔn˧	a:˧lo˧	a˧vak˧
276	come	hɔŋ˥pai˧	a˧rɔn˧kal˧	a˧ra˩	a˧vɔ˧	aŋ˧lə:k˧
277	enter	lut˥	a˧rɔn˧lu:t˩	a˧lut˧	a˧ŋe˧	a˧ku:n˧
278	return	ki˧le?˧	a˧rɔn˧ki:r˧	a˧kir˧tʰan˧	a˧vɔ˧ku˧ha˧	aŋ˧le:ŋ˧
279	push	sɔ:n˥	a˧nam˥	a˧nam˧	a˧tɔ˧lai˧	a˧nui˧
280	pull	kai˩	a˧pɔt˧	a˧dɔ?˧	a˧du˧pʰi˩	a˧rʉ:˧
281	kick	sui˩	a˧pet˧	a˧tʃʰui?˧	a˧tʃʰei˧	a˧pa˧tʰui˧
282	throw	lɔ:n˩	a˧pai?˧	a˧tʃʰe˧	a˧tʰau˧	a˧pʰe:i˧
283	fall	kia˩	a˧tla:˩	a˧tla:˧	a˧tla˧	a˧ka:k˧
284	swim	tui˥pek˩	tui˥a˧l̥eo˧	ti˧a˧lio˧	a˧ti˧a˧zɔ˧	tui˧a˧jao˧
285	float	tui˥tuŋ˩ la:m˧	tui˥a˧len˩	a˧vuan˧	am˧pʰo˧lai˧	tui˧sun˧a˧p
286	sink	tui˥kia˩	tui˥a˧a˧pil˧	a˧pil˩	ti˧a˧nau˧	aŋ˧tui˧jaok
287	flow	luaŋ˧	tui˥luaŋ˥	a˧luaŋ˩	ti˧a˧lo˧lai˧	tui˧a˧lɔŋ˧
288	give	pia˥	a˧pe:˩	a˧pe:k˧	a˧pie˧	a˧pe:k˧

289	tie	kʰi?˩	a˩ʈɔ:n˥	a˩ʈem˥	a˥ʤa˩tau˥	a˩kɔ:n˥
290	wipe	nu:l˩	a˥ru:˧	a˩tʰu˩	a˥tʰu:˥	a˩mi˥mo˥
291	rub/scrub	nɔ:t˧	a˥nɔ:t˧	a˩ŋɔr˧	a˥ʤa˩ta:˥	a˩te:t˥
No.	**Gloss**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**
292	wash	sil˧	a˩sil˧	i˩ʈɔl˩	a˥pa˩si:˥	a˩pa˩si˥
293	launder	sɔ:p˧	a˥su:˧	a˩suk˩	ʤaɔ˥sie˥a˥pa˩so˥	lei˥ho˥a˩pa
294	bathe	ki˩sil˧	a˥in˩bual˥	i˩kʰɔl˥	ti˩a˩si˩	tui˥a˩hɔk˥
295	hit	vua˧	a˥vua˧	a˩tuk˩	a˥tu:˩	a˩pa˩kʰa:˥
296	split	su˩kʰam˧	a˩pʰel˧	a˩tʃʰeu˥	a˥pa˩tʃʰai˩	a˩kɔi˥
297	cut hair	sam˧me:t˧	sam˩a˩met˧	a˩me˩	sa:˥a˩ŋu:˥	a˩san˥a˩vɔl
298	stab	sun˧	a˥tʰat˩/a˥vit˩lum˩	a˩tʰa?˩	a˥tʃʰuo˩so˩	a˩tʰɔŋ˥
299	grind	gɔ:i˩	a˩rial˧	a˩rial˧	a˥rie˩	a˩ki:˥
300	plant	sua:n˧	a˩pʰun˧/a˩ʤiŋ˩	a˩ʤin˥	ʤi˩a˥ʤei˩	a˩iŋ˩
301	dig	tou˧	a˥lai˧/a˩ʤo˥	a˩ʤo?˩	a˩lei˥a˥ʤo˩	a˩ra˩ki˥
302	bury (corpse)	pʰu:m˩	a˩pʰu:m˧	a˩pʰum˩	a˥pa˩bo:˥	bai˥pʰun˥
303	winnow rice	se:p˩	bu?˩a˩hel˥	a˩vam˩	a˩tʰle˧	saŋ˩a˩pa˩se
304	dry something	pʰou˩	a˩pʰo:˥	a˩ʤa:r˥/pʰo˥	a˩zo:˩	a˩vɔ:k˥
305	pound rice	su:˧	a˩de:ŋ˥	a˩suk˩	a˩pʰau˥	a˩deŋ˥
306	cook rice	huan˧	a˥tʃʰu:m˧	a˩tʃʰuan˥	a˩tʃʰa˩	a˩tʰɔŋ˧
307	boil something	tui˧huan˧	a˩so:˥	a˩tʃʰum˩	a˩bu:˩	a˩bu:˥
308	burn	ha:l˧	a˩ha:l˥/a˥kaŋ˧	a˩kʰaŋ˩	mei˥a˥ro:˩	mai˥a˥ʟei?˥
309	extingth (fire)	mit˩	mei˥a˥tʰat˩	mei˩a˩tʰa˥	mei˩a˩dem˩	mai˥a˩pa˥d
310	work	sem˧	na˧a˥tʰok˩	rian˧tuan˧	re:˩a˩re˩	a˩to˥a˩sa?˩
311	play	ki˩mɔ:l˩	a˥in˧fiam˩	len˩te˩ʤel˥	a˥pa˩lo˥	a˩ŋak˧
312	dance	la:m˩	a˩la:m˩	la:m˧	a˥la:˩	a˩lan˧
313	shoot	ka:p˧	a˥ka:p˧	ka?˩	a˥ka˥	a˩ka?˥
314	hunt	sa˧beŋ˧	sa˩ʤa:ŋ˥	ram˩vai˥	a˥ʤa˩dai˧	ta˩moi˥aŋ˥l
315	kill	tʰat˩	a˥tʰat˩	a˩tʰa˥	a˥tʰie˩	a˩pa˩duk˩
316	fight	ki˩tɔ:ŋ˧	a˥in˩sual˥	i˩vel?˥	a˩tu:˥ta˥a˥tʰie˩	a˩pan˥
317	buy	lei˧	a˩lei˧	ʤɔ:k˩	a˥ʤa˩lei˥	a˩ɣan˧
318	sell	zuak˩	a˩zuar˥	tʰil˩zuar˥	a˩zia˩	a˩jo:˧
319	exchange	kʰek˧	a˩tʰleŋ˧	i˩tʰlen˥	a˩ma˥tlai˩	a˩le:˥
320	pay	pi:a˧	man˩pe:˧	man˧pe:k˧	a˥ma:˩a˩pie˩	a˩pʰu˩pei˥
321	steal	gu:˧	a˥ru:˧	tʰil˩fir˥	a˥pa˩ru:˩	a˩hən˧
322	one person	kʰat˩	pa˩kʰat˩	pa˩kʰat˩	pa˩kʰa˩	lɔŋ˩me:˥
323	two	ni?˩	pa˩ŋi?˩	pa˩ŋi?˩	pa˩ŋe˩	lɔŋ˩mi:˥
No.	**Gloss**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**
324	three	tʰum˩	pa˩tʰum˧	pa˩tʰum˧	pa˩tʰo˩	loŋ˩tʰun˩
325	four	li˩	pa˩li:˩	pa˩li˧	pa˩li˩	lɔŋ˩ba˩li˥
326	five	ŋa˩	pa˩ŋa:˩	pa˩ŋa:˧	pa˩ŋa˩	lɔŋ˩pa˩ŋa:˩
327	six	guk˩	pa˩ruk˩	pa˩ruk˩	pa˩ʤa˩ru:˩	lɔŋ˩ta˩ruk˥
328	seven	sa˥gi?˩	pa˩sa˩ri?˩	pa˩sa˩ri?˥	pa˩sa˩ri˩	lɔŋ˩sa˩ri?˥
329	eight	giat˧	pa˩riat˧	pa˩riet˧	pa˩ʤa˩re˧	lɔŋ˩de˩ja˥
330	nine	kua˧	pa˩kua˧	pa˩kua˧	pa˩ʤa˩ki:˧	lɔŋ˩ta˩kɔ˥
331	ten	sɔ:m˧	sɔ:m˧	pa˩ra:˧	pa˩ro:˩	lɔŋ˩ha˥
332	hundred	za:˧	za:˧	za˩kʰat˥	za˩kʰa˩	lɔŋ˩suŋ˩vai
333	thousand	tu:l˧	saŋ˧kʰat˩	tʰɔŋ˩kʰat˥	tʰau˥kʰa˩	lɔŋ˩saŋ˥
334	many	tam˧	a˩tam˧	a˩tam˧pi˩	ru˩ŋa:˥sa˩	a˩nuei˥

335	all	vek˧˥piˊ	a˧˩vaiː˥˩in˧	a˧˩zaː˥˧te˨˩	a˧˥ma˧˩zoː˧˩dua˧˥	bui˧˩bui˧˥
336	some	pɔːl˧kʰat˧˥	a˧˩tʰen˥˩	a˧˩tʃʰeu˧˩kʰat˧˥	a˧˥tʃʰai˧˩	tʰɔn˧˩tu˧˥
337	few	tɔːm˧˩	a˧˩tlem˥˩	a˧˩tlɔm˧˩te˨˩	ma˧˥dʑau˧˩	i˧˩sa˧˥
338	half a unit	a˧˩laŋ˧˩	a˧˥dʑan˨˩ve˨˩	a˧˩tʃʰeu˨˩	a˧˥kʰo˧˩pʰie˧˩	ka˧˩hʉ˧˥
339	big	lian˨˩	a˧˥lian˨˩	a˧˩ŋan˨˩	a˧˥lai˧˩	a˧˩len˥˩
340	small	neːuˊ	a˧˩teːˊ	a˧˩faː˨˩	a˧˥dʑau˧˩	a˧˩tʰəŋ˥˩
341	long	saːuˊ	a˧˩sei˧˥	a˧˩sau˨˩	a˧˥sei˧˩	a˧˩sau˧˥
342	short (length)	tɔmˊ	a˧˩tɔːiˊ	a˧˩tɔːi˨˩	a˧˥pa˧˩tʃʰa˧˩	a˧˩toi˧˩
343	tall	saːŋ˧˩	a˧˩saːŋ˧˥	a˧˩saːŋ˨˩	a˧˥sa˧˩	a˧˩saŋˊ
344	short (height)	niamˊ	a˧˩n̥iamˊ	a˧˩niam˨˩	a˧˥n̥ai˧˥	a˧˩n̥en˧˥
345	thick	saʔ˧˩	a˧˥tʃʰaʔ˧˩	a˧˩tʃʰaʔ˧˥	a˧˥tʃa˧˩	a˧˩tʰaː˥˩
346	thin	paˊ/panˊ	a˧˩pan˧˥	a˧˩pan˨˩	a˧˥paː˧˥	tam˧˥paː˥˩
347	fat	tʰau˧˩	a˧˩tʰaːu˧˥	a˧˩tʰau˨˩	a˧˥tʰɔː˧˩	a˧˩tʰau˥˩
348	skinny	gɔːm˧˩	a˧˩d̥ʑeːrˊ	a˧˩der˧˩	a˧˥zɔ˧˩	a˧˩ɣei?˥˩
349	wide (breadth)	zaiˊ	a˧˩zau˧˥	a˧˩kau˥˩	a˧˥kɔ˧˩	a˧˩kau˥˩
350	narrow	tɔiˊ	a˧˩zim˧˥	a˧˩biː˧˩	a˧˥bua˧˩	taŋ˧˩sei˧˥
351	deep	tʰukˊ	a˧˥tʰuːk˨˩	a˧˩tʰuk˧˩	a˧˥tʰu˧˥	a˧˩tʰɔːk˧˥
352	shallow	daiˊ	a˧˩pɔːn˥˩	a˧˩puan˥˩	a˧˥pʰa˧˩	ta˧˩dei˧˥
353	round	beːmˊ	a˧˩bial˧˥	a˧˩kulʔ˧˥	a˧˥l̥ɔ˧˥	a˧˩ta˧˩bʉ˧˥
354	full	dimˊ	a˧˥kʰat˧˩	a˧˥kʰat˧˥	a˧˥bie˧˥	a˧˩kɔi˧˩
355	right side	ziatˊlamˊ	diŋ˥˩lamˊ	ɔlʔ˧˥lei˧˩kam˧˩	a˧˥d̥ʑa˧˩d̥ʑa˧˩la˧˩	ban˧˩taŋ˧˩be
No.	**Gloss**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**
356	left side	veiˊlamˊ	vei˥˩lamˊ	keʔ˧˥lei˧˩kam˧˩	a˧˥d̥ʑa˧˩vei˧˩la˧˩	ta˧˩ɣi˧˩beŋ˧˥
357	straight	taŋ˧˩	a˧˩ŋil˧˥	a˧˩diŋ˧˩	a˧˥dɔ˧˥	a˧˩tɔːŋˊ
358	far	gamˊlaˊ	a˧˩l̥aː˧˥	a˧˩l̥aː˧˩	a˧˥l̥a˧˩	a˧˩l̥aː˧˥
359	near	naːiˊ	a˧˩n̥aːiˊ	a˧˩nai?˧˥	a˧˥n̥e˧˥	a˧˩n̥ai˥˩
360	this	hi?˧˥	hei˨˩hi˧˥	hi˧˩hi˧˩	hi˧˩le˧˩hi˧˩	hi˧˥ta˧˩
361	that	huaː˧˩	kʰa˨˩kʰa˧˥	kʰi˧˩kʰi˧˩	ho:˧˥le˧˩hu˧˩	hu˧˥ta˧˩
362	black	vɔm˧˩	a˧˩dum˧˥	a˧˩nak˧˩	a˧˥vau˧˩pa˧˥	ka˧˩duŋ˥˩
363	white	kaːŋ˧˩	a˧˩val˧˥	a˧˩raŋ˨˩	a˧˥raː˧˩pa˧˥	ka˧˩ta˧˩lɔŋ˥˩
364	red	san˧˩	a˧˩sen˧˥	a˧˩sen˨˩	a˧˥sai˧˩pa˧˥	ka˧˩tʰin˥˩
365	green	eŋ˧˩/hiŋ˧˩	a˧˩ɾiŋ˧˥	a˧˩ɾiŋ˨˩	a˧˥ɾeo˧˩pa˧˥	ka˧˩pa˧˩eŋ˥˩
366	yellow	naːi˧˩paːk˧˩	a˧˩eŋ˧˥	a˧˩ai˧˩ɾeː˥˩	a˧˥mai˧˩pa˧˥	ka˧˩pa˧˩sen˧˥
367	dirty	niːn˨˩	ten˨˩ɔmˊ	a˧˩tʰur˨˩	a˧˥pua˧˩a˧˥le˧˩	an˧˩raŋ˧˩ak˥˩
368	new	tʰak˧˥	a˧˩tʰar˧˥	a˧˩tʰar˨˩	a˧˥tʰie˧˩	aŋ˧˥tʰa˧˩
369	old	luːi˧˩	a˧˩l̥ui˧˥	a˧˩l̥un˥˩	a˧˥pa˧˩rai˧˩	aŋ˧˥ɣən˥˩
370	dark	mialˊ	a˧˩tʰim˧˥	a˧˩mui˥˩	a˧˥zeo˧˩	a˧˩viŋˊ
371	bright	taːŋ˧˩	a˧˩ɛːŋ˥˩	a˧˩d̥ʑeːo˧˩	a˧˥kʰai˧˩	a˧˩aŋ˥˩
372	the same	ki˧˩baːŋ˧˩	in˨˩aŋ˨˩	a˧˩kʰat˧˥	a˧˥lo˧˥	a˧˩m̥ɔŋ˥˩
373	different	ki˧˩lamˊdaŋˊ	ɾaŋ˧˥	a˧˩daŋ˧˩	a˧˥na˧˥nei˨˩	a˧˩laŋ˥˩
374	sweet	kʰum˧˩	a˧˩tʰlum˧˥	a˧˩tʰlum˨˩	a˧˥tʰlɔ˧˩	a˧˩tui˥˩
375	sour	tʰukˊ	a˧˩tʰuːrˊ	a˧˩tʰɔr˨˩	a˧˥tʰo˧˥pa˧˥	a˧˩tʰɔːkˊ
376	bitter	kʰaːˊ	a˧˥kʰaː˨˩	a˧˩kʰaː˧˩	a˧˥kʰaː˨˩	a˧˩kʰaː˧˥
377	spicy hot	tʰak˧˩	a˧˥tʰak˧˩	a˧˩tʰak˧˩	a˧˥heː˧˩	a˧˩saːˊ
378	rotten	muatˊ	a˧˥t̥oi˧˩	a˧˩tʰuː˧˩	tʰuː˧˩pa˧˩	a˧˩ɣɔŋ˥˩
379	swell	bɔːk˧˩	a˧˩vuːŋ˥˩	a˧˩pʰiŋ˨˩	a˧˥tlɵː˧˩	a˧˩bɔk˧˩
380	dry	keu˧˩	a˧˩roː˧˥	a˧˩rau˧˩	a˧˥d̥ʑoː˧˩	a˧˩pʰuiˊ
381	wet	kɔːtˊ	a˧˥nɔŋ˧˩	a˧˩d̥ʑin˧˩	a˧˥da˧˥	tui˧˩a˧˩sui˥˩

382	hot	sa˧	a˧lum˥	a˧sa:˩˨	a˥pa˧lə˧	a˧bi:˩
383	cold	vɔ:t˧	a˥vɔ:t˩˨	a˧kik˥	a˥d̥ʒa˧kua˧	a˧de˩
384	sharp	hiam˧	a˧zum˥	a˧zum˧	a˥te:˧	a˧pa˧sui˧
385	blunt	mɔ:l˩	a˧bil˩	a˧n̥ɔl˩˨	a˥mo:˥	a˧bə:ŋ˩
386	heavy	gik˧	a˥rit˧	a˧rit˥	a˥r̥i:˧	a˧ɣi:t˧
387	hard	sak˧	a˥sak˧	a˧hak˥	a˥d̥ʒa:˥	a˧tak˧
No.	**Gloss**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**
388	smooth	zɔ:l˧	a˧na:l˩	a˧mil˩˨	a˥pa˧n̥ie˩˨	a˧hɔi˩
389	fast	man˩la:ŋ˩	a˧raŋ˥	a˧reŋ˧	a˥d̥ʒa˧tlie˧	a˧raŋ˥
390	slow	ze˧ka:i˩	a˧muaŋ˩	a˧nuar˥	a˥ho:˧	pa˧jai˩
391	strong	ha:t˩	a˥d̥ʒak˧	a˧tʰɔ:ŋ˧	a˥tʰa˥a˥tlɔ˧	a˧tʰa˥a˥len˧
392	weak	tʰa˥ne:m˧	a˥d̥ʒak˧lo˧	a˧der˧	a˥tʰa˥a˥dia˥	a˧tʰa˥a˧bəŋ
393	tired	tɔ:l˩	a˥ha?˧	a˧ba˥	a˥tʰa˥a˥ba˧	a˧bai˥
394	blind	mit˧tɔ:˩˨	mit˧del˥	a˧mit˧d̥ʒɔ˥	a˥ma:˥a˥d̥ʒɔ˧	a˧mi˧a˧bui˥
395	deaf	beŋ˧ŋɔŋ˧	beŋ˥tʃʰe:t˩˧	a˧n̥a˥tʃʰet˧	a˥na˧a˥pa˥	ka˧na˥a˧bi
396	bald	tal˩˨kɔl?˧	d̥ʒaŋ˩˨ŋal?˧	a˧d̥ʒal˧ŋau˩˨	a˥kʰi:˥pa˧o˥	nu˧peŋ˧ta˥o
397	naked	pum˩˧taŋ˩	sa˩˨ruak˩˨	aŋ˧ki˥lɔ:˩˨	ne˥rai˧pa˧ta˧au˥	oŋ˧kɔ˥lɔŋ˥
398	good	hɔi?˧	a˥tʰa:˩˨	a˧t̪ʰa:˥	a˥pʰa˧	a˧hɔi˧
399	bad	sia˩˧	a˧tʃʰia˩˨	a˧tʃʰia˩˨	a˥tʃʰe:˧	a˧si:˥
400	correct	dik˧/man˧	a˥dik˧	a˧m̥an˧	a˥də˥	a˧m̥eŋ˥
401	wrong	kʰial˩˨	a˥dik˧lo˧	a˧pal?˧	a˥pa:˧	a˧m̥a:˥
402	when (past)	d̥ʒik˧in˧	eŋ˧tik˧kʰan˥ŋe:˧	zei˧tik˥lio˧a?˥	kʰa˧ti˧ne:˥ta˧ma˧	mə˧tu˧na˥o
403	where	kɔi˩a?˧	kʰɔi˧a?˧ŋe:˩˨	kʰoi˧ka˧a?˥	kʰa˥tai˧lo˧ma˧	mui˧no˧o?˧
404	who	kua˩˨	tu˧ŋe:˩˨	a˧hau˧da?˧	a˥hau˩˨ma˧	mi˧ni˧
405	what	baŋ˩˨	eŋ˧ŋe:˩˨	zei˧da?˧	kʰa˧pe:˥a˥d̥ʒa:˧	moi˧ni˩
406	how many persc	baŋ˩˨za?˧	eŋ˧zat˩ŋe:˩˨	zei˧zat˥da?˥	kʰa˧zi:˥i˥ma˧	loŋ˧mui˧e˧t
407	stream	lu:i˩˨	lui˩˨	ti˧va˩˨	ti˥va˩	va˧soŋ˥
408	wet rice field	lou˩	lou:˩	lei˩˨kuaŋ˩˨	lei˥pa˧lie˩	li˧praŋ˥
409	ripe	min˧	min˥	a˧m̥in˩˨	a˥m̥a˧	a˧m̥in˩
410	rice seedling	bu?˧nou˩	bu?˧d̥ʒi:˩˨	fa˥d̥ʒaŋ˩˨d̥ʒi˧	sa˧d̥ʒa:˧pa˥ko˥	saŋ˧kuŋ˥
411	pangolin	sa˥pʰu˩˨	sa˧pʰu:˥	sa˥pʰu:˧		tʰiŋ˥pʰei?˥
412	crested	suaŋ˧	a˧tʃʰuaŋ˥	a˧tʃʰuaŋ˩˨	a˥d̥ʒə˧a˥au˥	a˧moŋ˧o˥o
413	water leech	li:t˩	sai˥li:t˩˨	li:t˥	ma˧l̥i˥	mio?˥
414	land leech	vɔ:t˧	vaŋ˩˨vut˧	d̥ʒaŋ˩˨vut˧	d̥ʒa˧va?˧	tu˧va˥
415	earth worm	taŋ˩˧te:l˩˨	d̥ʒaŋ˥pa:t˩	d̥ʒaŋ˩˨d̥ʒel˥	d̥ʒa:˥ka˧rie˥	a˧tei˥
416	I (1s)	kei˩˧ma?˧	kei˩˧ma?˧	kei˧ma?˥	kei˧ma?˧	kai˥
417	thou (2s)	naŋ˩˧ma?˧	naŋ˩˧ma?˧	naŋ˧ma?˥	na˧ma?˧	naŋ˥
418	it	a˥ma?˧	a˧ma?˧	a˧ma?˥	a˥ma˧no˥	a˧ni:˩
419	we (1p)	ei˩˧mau˩˨	kan˩	kan˧ma?˥	kei˥mo˥	kai˧mi˧
No.	**Gloss**	**Tedim**	**Mizo**	**Hakha**	**Mara**	**Khumi**
420	you (2p)	no˩˨mau˩˨	in˩	nan˧ma?˥	na˥mo˥	naŋ˧mi˧
421	they	a˥mau˩˨	an˩	an˧ma?˥	a˥mo˥	e˧ni˧mi˥
422	sleeping area	lup˧na:˧	pin˩˨dan˧	i˥nak˧kʰan˥	a˥muŋ˥na˥a˥kʰa˧	i˥i˧hai˧miŋ
423	take	la:˩	a˥la:˩˨	la:k˧	a˥la˧ho˥	a˧la:˥
424	disappear	maŋ˩	bou˥ral˥	a˧lou˥	a˥lei˧ha˥	aŋ˧m̥a˥
425	knife	at˩˧tan˩	pʰel˧	a˧d̥ʒan˥	a˥d̥ʒu˧sa˥	a˧bi˧
426	bend	kɔ:i˩	a˥kɔi˩˨	a˧kɔ:i˥	a˥kə˥	ta˧kɔn˩
427	lift	dɔm˩/toi˧	d̥ʒɔ:i˩	a˧d̥ʒɔ:i˥	a˥d̥ʒə˧lə˥	a˧ta˧bən˧ta

428	make	bɔːlꜜ	siamꜛ	tuaʔꜜ/serꜜ	aꜜtoːꜜ	saːꜛ
429	don't doit	hiꜜhiʔꜜkenꜜ	tiꜜsuʔꜜ	tuaʔꜜl̥aꜜ	heꜜheːꜛr̥eꜜkʰaꜜ	hiꜜtaꜜsaꜜha
430	half a quantity	aꜜlaŋꜜ	aꜜd̥z̥anꜜveːꜜ	aꜜtanꜜ	d̥z̥euꜛkaꜜ	kaꜜhʉːꜜ
431	disgusting	kiʔꜜhuaiꜜ	aꜜtenꜜ	fiꜜ	aꜜr̥iꜜr̥iꜜlaꜜpaꜜ	paꜜnuꜜəꜜtʰɔ
432	warm	luːmꜜ	aꜜlumꜜ	aꜜlumꜜmiꜛ	aꜜlaꜜl̥oːꜜpaꜜ	aꜜbiꜜənꜜ
433	cool	vɔtꜜ	aꜜdaiꜜ/aꜜvɔtꜜ	aꜜkikꜜmiꜛ	aꜜd̥z̥aꜜkʰaꜜdaiꜜtʰiꜜ	aꜜdeꜜrʉꜜ
434	difficult	hakꜜsaꜜ	aꜜharꜜ	aꜜharꜜmiꜛ	aꜜruːꜜ	aꜜraiꜜpʰiꜜtʰ
435	easy	ɔlꜜ	aꜜɔlꜜ	aꜜfɔːiꜜmiꜛ	aꜜnuːꜜ	aꜜjuiꜜsaꜜ
436	loose	kɔlꜜ	aꜜtʰɔːlꜜ	aꜜlɔŋꜜmiꜛ	aꜜtlauꜜpaꜜ	aꜜaŋꜜl̥ɔŋꜛ
437	bro elder of m	uːꜜpaꜛ	uːꜜbelꜜ	kaꜜuꜜpaꜜ		
438	sis elder of f	uːꜜnuꜛ	uːꜜnuꜜ	kaꜜuꜜnuꜜ		taꜜnuꜜkaꜛjo
439	sis elder of m	uːꜜnuꜛ	uːꜜnuꜜ	kaꜜfarꜜnuꜜ		taꜜnuꜜkaꜛna
440	bro yr of m	naːuꜜpaꜛ	nauꜛ	kaꜜnauꜜpaꜜ		aꜜmaꜜhaꜜka
441	sis yr of f	naːuꜜnuꜛ	farꜛnuːꜜ	kaꜜnauꜜnuꜜ		kaꜜsoꜛkoʔꜜ
442	sis yr o fm	naːuꜜnuꜛ	farꜛnuːꜜ	kaꜜfarꜜnuꜜ		taꜜnuꜜkaꜜna
443	when future	kɔiꜛaʔꜜ	eŋꜜtikꜜaʔꜜŋeːꜜ	zeiꜜtikꜜaʔꜜdaʔꜜ	kʰaꜜtiꜜneːꜜtaꜜvɔꜜd̥z̥auꜜ	moiꜜnɔꜜɔkꜛ

APPENDIX F

WORDLIST USED FOR LEXICOSTATISTICS

The following table shows phonetic transcription of the wordlist of 100 vocabularies used for lexicostatistic analysis. The first column from the left is a serial number of the wordlist and the second column indicated the reference number which appear in the wordlists. The third column in the English gloss and the rest are the words in languages compared for lexicostatistic comparison.

Sr.No	Ref.No.	Gloss	Thado	Sinyin	Tedim	Zo	Bualkhaw	Zanniet	Falam	Taisun	K
1	1	sky	van˧	van˧	va:n˩˨	van˩˨	va:n˧	va:n˧	va:n˧	van˧	v
2	2	sun	ni:˥˥	ni:˧	ni˧	ni:˧	ni:˧	ni:˥˥	ni:˩	ni˩	n
3	3	moon	l̥a:	tʰa:˧	kʰa:˩˨	l̥a:˩˨	la˧	tʰla˧	tʰla˧	tʰla˧	t
4	4	star	a˧	ak˧	ak˧	a:˧	ar˧	ar˥˥	ar˥	ar˧	a
5	5	cloud	mei˥˥	mei˥	me:i˧	me:i˧	me:˧	mei˥˥	mei˧	me˧	m
6	7	rain	go:˧	ŋua˩˨	gua?˧	guo˩˨	rua˧	rua˧	rua˧	rua˧	r
7	12	night	za:n˩˨	za:n˩˨	za:n˩˨	zan˩˨	za:n˧	za:n˧	zan˧	zan˧	z
8	18	year	kum˧	kum˩˨	kum˩˨	kum˩˨	kum˧	kum˩˨	kum˧	kum˧	k
9	23	water	tui˥	tui˥˥	tu:i˥	tu:i˥˥	ti:˩	ti˩˨	ti˧	ti˥	t
10	26	earth/soil	lei˥	lei˥˥	lei˥	lei˥˥	lei˥	lei˥	lei˧	lei˥	l
11	29	stone	soŋ˥	suaŋ˥˥	luŋ˥	suoŋ˥˥	luŋ˩	luŋ˧	luŋ˧	luŋ˥	l
12	34	iron	tʰi˥	tʃʰi:k˥˥	sik˥	sia˥˥	tʰi:r˩	tʰi:r˩˨	tʰiar˥	tʰir˥˥	t
13	35	mountain	mo:l˥˥	muaŋ˥˥	mual˧	muol˧	mual˧	tla:ŋ˥	tlaŋ˩	tlaŋ˩	t
14	38	tree	tʰiŋ˥	tʃʰiŋ˧	siŋ˥	siŋ˥˥	tʰi:ŋ˩	tʰiŋ˩˨	tʰiŋ˥	tʰiŋ˥	t
15	41	thorn	liŋ˥	liŋ˧	liŋ˧	liŋ˧	liŋ˧	l̥iŋ˩	l̥iŋ˥	l̥iŋ˩	l̥
16	42	root	bul˥	zuŋ˧	zuŋ˥˥	hui	ham˩	ham˩˨	g̊am˥	g̊om˥	-

17	43	leaf	na˧	te˥	te?˧/na?˧	te˥˩	na˧	ŋ̊a˧	ŋ̊a˧	ŋ̊a˥
18	46	seed	mo:˥	tsi:˧	taŋ˥	taŋ˥	ʔi:˨	dzi˥˩	mu:˥˩	tsi˥˩
19	48	bamboo	go:˥	ŋua˧	gua˧	guo˧	ro:˥	rua˨˩	rua˨	rua˨
20	76	monkey	zo:ŋ˥	zo:ŋ˨˩	zo:ŋ˧	zo:ŋ˨˩	zo:ŋ˧	zo:ŋ˥	zo:ŋ˨	zo:ŋ˨
21	81	dog	ui˥	ui˥	ui˨˩	ʔui˥	ui˧	ui˥˩	ui˧	ui˥
22	83	bite	pet˧	pet˥˩	pet˥˩	pet˥˩	pet˧	ŋe:o˨	ke:o˥˩	kæo˥˩
23	89	horn	ki:˥˩	ki:˥	ki:˨˩	ki:˥	ki:˨˩	ki:˨	ki:˥˩	ki˥˩
24	90	tail	mei˥	mei˥	mei˨˩	mei˥	mei˨	mei˥˩	mei˥	mi˧
25	93	bird	va˥	va˥	va˥	va˥	va˥	va˧	va:˧	va˥˩
26	95	wing	ŋ̊a˧	tʰa:˨	kʰa˥˩	ŋ̊a˥˩	la:˧	kau˥˩	tʰla˧	tʰla˧
27	96	feather	mul˧	mul˥	mul˨˩	mul˥	mul˨˩	m̥ul˥˩	m̥ul˥	m̥ul˧
28	97	fly	leaŋ˥	leaŋ˧	zuaŋ˧	le:ŋ˧	zuaŋ˥	zuaŋ˨˩	zam˨˩	zuaŋ˧
29	98	egg	tui˥	tui˧	tu:i˧	tu:i˧	ti:˧	ti:˨˩	ti:˨˩	ti˨
30	101	fish	ŋa:˥	ŋa˥	ŋa˨˩	ŋa˥	ŋa:˥	ŋa:˨	ŋa:˧	ŋa˥˩
31	110	louse head	hit˧	hik˥	hik˧	hik˥˩	hik˧	hik˧	ɾ̥ik˧	ɾ̥ik˧
32	119	head	lu:˨˩	lu˧	lu:˧	lu˧	lu:˧	lu:˨	lu:˨	lu˨
Sr.No	**Ref.No.**	**Gloss**	**Thado**	**Sinyin**	**Tedim**	**Zo**	**Bualkhaw**	**Zanniet**	**Falam**	**Taisun**
33	122	hair	sam˧	sam˨	sam˨˩	sam˥	sam˨	sam˧	sam˧	sam˥
34	125	eye	mit˧	mit˥˩	mit˧	mit˥˩	mit˧	mit˧	mɨt˧	mit˧
35	127	nose	na˥	na:k˥˩	na:k˥˩	nap˥˩	na:r˧	ŋ̊a:r˧	na:r˥˩	ŋ̊ar˧
36	129	ear	bil˥˩	bil˥	bil˨˩	bil˥	beŋ˧	bil˧	ŋ̊a:˨	ŋ̊a˨
37	130	mouth	kam˨˩	kam˧	kam˧	kam˧	kam˧	ka:˨	ka:˨˩	ka˨
38	131	tongue	lei˨˩	lei˧	le:i˧	le:i˧	lei˧	lei˨	lei˨˩	lei˨
39	133	tooth	ha:˨˩	ha:˧	ha:˧	ha:˧	ha:˥	ha˧	ha:˨	ha˨
40	135	chin	ŋ̊aŋ˨˩	kʰa:˥	kʰa:˨˩	kʰa:˥	kʰa:˨˩	he˧	kʰa:˨	kʰa˥˩
41	139	belly	pu˥	ŋil˧	pi˨˩	gil˧	pum˨	pum˨	pum˥˩	pum˥˩
42	141	heart	luŋ˧	luŋ˧	luŋ˧	luŋ˧	luŋ˥	luŋ˨˩	luŋ˧	luŋ˨
43	143	liver	tʰin˧	tʃʰin˥˩	sin˥˩	sin˥˩	tʰin˧	tʰin˥˩	tʰɨn˧	tʰin˧
44	145	hand	kʰot˨	kʰut˥˩	kʰut˧	kʰut˥˩	kut˧	kut˧	kut˧	kut˧
45	150	finger nail	tin˥	tsin˨˩	tin˨˩	tsin˥	tin˨˩	tin˥˩	te:˥	tin˥
46	152	leg	ke:ŋ˥	peaŋ˨˩	kʰe:˥˩	keŋ˥	ko:ŋ˨	ke˧	ke:˧	ke˧
47	154	knee	kʰu:p˥	kʰu:k˥	kʰuk˨˩	kʰup˥	kʰu:k˨	kʰu:k˥˩	kʰuk˥˩	kʰuk˥˩
48	159	bone	gu:˧	ŋu:˥˩	guʔ˧	gu˥˩	ru˧	ru˧	ru˧	ru˧
49	161	flesh	sa:˥	sa:˨	sa˥	sa˥	sʰa:˨˩	sa:˥˩	sa:˥˩	tit˥˩
50	163	skin	vun˥	vun˨˩	vun˨˩	vun˥	vu:n˨	vun˥˩	vun˥	vun˧
51	171	person	mi:˥	mi˥	mi˥	mi	mi˥	mi˧	mi˧	mi˧
52	172	father	pa:˥	pa:˨˩	pa˨˩	pa˥	pa:˥	pa:˨	pa˥˩	pa˨
53	173	mother	nu:˥	nu:˥	nu˨˩	nu˥	nu:˥	nu:˥˩	nu˥˩	nu˨
54	182	name	min˨˩	min˧	min˧	min˧	miŋ˥	m̥iŋ˨	min˥	m̥in˨˩
55	184	road/path	lam˥	lam˨˩	lam˨˩	lam˥	lam˨	lam˨	lam˧	lam˧
56	192	mat	pʰe:˥	pʰek˥˩	pʰek˧	pʰe:k˧	kʰo˥	pʰak˧	pʰer˨˩	pʰer˨
57	212	fire	mei˥	mei˥	mei˨˩	mei˥	me:i˨	mei˨	mei˥	mi˥
58	213	ashes	vut˧	vut˥˩	vut˧	vut˥˩	vut˧	vut˧	vut˧	vut˧
59	214	smoke	xu˧	kʰu˥	kʰu˨˩	kʰu˥	kʰu:˥	kʰu:˥˩	kʰu:˥˩	kʰu˥˩
60	224	see	mu:˧	mu˥˩	mu˥˩	mu˥˩	mu:m˧	m̥u˧	m̥u:˧	m̥u˨
61	226	weep	kap˧	kap˥˩	kap˧	kap˥˩	kap˧	kap˧	ʈap˥	tap˧
62	227	eat	ne:˥	ne:˨˩	ne˨˩	ne˨˩	ei˧	ai˥	ei˨˩	i˨
63	234	vomit	lu:˥˩	lua˥˩	lua˥˩	luo˥˩	o:k˧	o:p˨	o:k˥	luak˥˩

64	244	laugh	nui˥˩	nui˥˩	nu:i˦	nu:i˦	ni:˦	ŋ̊i:˨˩	ŋ̊i:˨˩	ŋ̊i˥˩	n
Sr.No	**Ref.No.**	**Gloss**	**Thado**	**Sinyin**	**Tedim**	**Zo**	**Bualkhaw**	**Zanniet**	**Falam**	**Taisun**	**K**
65	250	sing	sa˦	sa:˩˧	sa˩˧	sa˩˧	sa˦	sa˦	sak˥	sak˦	s
66	251	think	ŋai˦	ŋai˩˧	ŋai?˦	ŋai˩˧	ruat˥	ruat˦	ruat˩˧	ruat˩˧	r
67	269	die	tʰi:˥˩	tʃʰi:˦	si:˦	si:˦	tʰi:˥	tʰi:˨˩	tʰi:˥˩	tʰi˨˩	t
68	271	sit	to:˥	to:˥	tu˦	to˦	tau˥	tau˥	tau˦	tau˥˩	t̪
69	272	stand	diŋ˥˩	diŋ˦	diŋ˦	diŋ˦	diŋ˦	diŋ˨˩	diŋ˦	diŋ˨˩	d
70	277	enter	lut˥	lu:t˥˩	lut˥˩	lut˥˩	lu:t˨˩	lu:t˩˧	lu:t˩˧	lut˩˧	l
71	281	kick	pe:˥	peak˨˩	sui˩˧	sui˩˧	sir˦	sir˨˩	si:t˩˧	sai˦	t̪
72	284	swim	lap˨˩	ok˩˧	pek˩˧	pe˩˧	leo˦	leo˦	leo˥	leo˨˩	l
73	288	give	pe:˥	pia˥	pia˥˩	pie˥	pe:˨˩	pe:˨˩	pe:k˩˧	pæk˩˧	p
74	308	burn	hal˥	hal˥˩	ha:l˥˩	ha:l˥	hal˥	ka:ŋ˨˩	ur˥˩	kʰaŋ˨˩	k
75	312	dance	la:m˥	lam˦	la:m˦	la:m˦	la:m˥	la:m˥˩	la:m˦	lam˥˩	l
76	313	shoot	ka:p˩˧	ka:p˥	ka:p˥˩	ka:p˥	ka:p˥˩	kap˩˧	ka:p˩˧	kap˨˩	k
77	315	kill	tʰet˥	tʰat˩˧	tʰat˨˩	tʰat˩˧	re:k˨˩	re:k˩˧	tʰat˥	tʰat˦	t
78	318	sell	zuo˥	zuak˦	zuak˦	zua˦	zuar˦	zuar˨˩	zuar˨˩	zuar˥˩	z
79	322	one person	xet˦	kʰat˥	kʰat˨˩	kʰat˩˧	kʰat˥	kʰat˥	kʰat˨˩	kʰat˨˩	k
80	323	two	ni˦	ni˩˧	ni?˨˩	ni˩˧	ni˥	ŋ̊i˥	ŋ̊i˨˩	ŋ̊i˨˩	ŋ̊
81	334	many	tam˥	tam˥˩	tam˥˩	tam˥	tam˦	tam˨˩	tam˥	tam˥	t
82	335	all	bon˦	vek˥	vek˥	zo˥sie	va˥	vek˥	za:˨˩	sen˨˩	z
83	339	big	gol˥	lian˦	lian˩˧	gol˥	lien˦	lian˦	tum˨˩	ŋam˩˧	ŋ̊
84	341	long	sao˦	sa:u˥	sa:u˥˩	sa:u˦	sa:ŋ˥	sau˩˧	sa:u˥	sau˥	s
85	344	short height	ne:m˩˧	niam˥˩	niam˥˩	niam˥	ʔom˦	niam˨˩	niam˥	niam˥	n
86	345	thick	sa˨˩	sa:˩˧	sa?˨˩	sa:˩˧	sa˨˩	sa˦	sa˥	sa˩˧	t̪
87	351	deep	tʰu˥	tʰu:k˥˩	tʰu:k˥˩	tʰuk˥	tʰuk˨˩	tʰu:p˩˧	tʰu:k˩˧	tʰuk˩˧	t
88	354	full	dim˥	dim˥˩	dim˥	dim˥	dim˥˩	dim˨˩	kʰat˥	kʰat˥	k
89	360	this	hi˦	hi˦	hi?˥	tam˥	he˦	he˦	hi˦	i˦	h
90	361	that	xu˦	tu˨˩	hua:˦	hu˦	kʰe˦	ke˦	kʰi˦	kʰa˦	k
91	362	black	vom˥˩	vom˥˩	vom˦	vom˦	haŋ˨˩	ha:ŋ˨˩	dum˦	dum˥˩	n
92	363	white	kaŋ˥	kaŋ˥˩	ka:ŋ˦	ka:ŋ˦	ŋou˥	ŋa:u˨˩	raŋ˨˩	raŋ˥˩	n
93	364	red	sen˥˩	san˥˩	san˦	san˦	sen˥	saŋ˦	sen˨˩	sen˥˩	s
94	365	green	dom˥	eŋ˥˩	eŋ˦/hiŋ˦	eŋ˦	hiŋ˥	pʰo˦	ɻiŋ˨˩	ɻiŋ˥˩	ŋ̊
95	368	new	tʰa:˥	tʰak˨˩	tʰa:k˥	tʰa˦	tʰer˦	tʰa:r˥˩	tʰar˥˩	tʰar˥˩	t
96	376	bitter	xa˦	kʰa:˥	kʰa:˥˩	kʰa:˥	kʰa:˥˩	kʰa:˩˧	kʰa:˩˧	kʰa˩˧	k
Sr.No	**Ref.No.**	**Gloss**	**Thado**	**Sinyin**	**Tedim**	**Zo**	**Bualkhaw**	**Zanniet**	**Falam**	**Taisun**	**K**
97	382	hot	sa:˥	sa˨˩	sa˦	sa˦	sa˥	sa:˥˩	sa:˨˩	sa˨˩	s
98	386	heavy	gi˨˩	ŋit˩˧	gik˨˩	gi?˩	rit˨˩	rit˨˩	rit˥	rit˦	r
99	403	where	hoi˦	koi˨˩	koi˥˩	hai˥	ko˨˩	kon˦	kʰui˦	kʰa˨˩	k
100	404	who	kue˨˩	kua˥	kua˩˧	koi˨˩	tu˨˩	ai˥	zau˥	zau˨˩	h

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1	1	sky	va:n˩	van˦	va:n˨˩	van˦	kʰo˦	kʰa:n˥	va:n˥	-	vuo
2	2	sun	ni:˥	ni:˨˩	ni:˦	ni˥	ŋ̊i˩˧	mik˥	ni:˥	ni:˥	niŋ
3	3	moon	tʰla:˩	tʰla˦	tʰa:˨˩	tʰa˦	kʰra:˥	kʰʰja:˦	tʰla:˦	kʰlo:˥	tʰla
4	4	star	ar˥	ar˥˩	a:˦	a˥	ai˩˧	a:i˨˩	a˦	a˦	a˥

5	5	cloud	tʃʰuːm˦˥	mej˧	mai˨	mai˦	mei˩	mei˦	maːi˧	meːi˦	my
6	7	rain	rua?˦	rua?˨	kʰua˦	kʰo˦˥	-	kʰo˦	-	joː˦	kʰ
7	12	night	zaːn˩	zaːn˦	zaːn˦	rum˩	tʰan˦˥	mɨː˦	-	muː˦	zuɔ
8	18	year	kum˩	kum˩	kuːm˦	kum˦˥	kum˦˥	kum˦	-	koːŋ˦	koŋ
9	23	water	tui˦˥	tiː˩	tiː˦	tui˨	tui˩	tui˧	tui˦˥	tui˩	tɨ˨
10	26	earth/soil	lei˦˥	lei˩	laːi˦˥	lai˩	lei˦	m̩dek˦	-	ɗai˦˥	ly˨
11	29	stone	luŋ˧	luŋ˩	loŋ˨	loŋ˩	luŋ˩	luŋ˧	l̥oŋ˨	luŋ˦	loŋ
12	34	iron	tʰir˦˥	tʰiːr˩	tʰia˨	sːum˦˥	si˩	tʰiːn˩	suːn˧	tʰiː˦˥	tʰa
13	35	mountain	tlaːŋ˨	tlaːŋ˦˥	taŋ˦	moːn˦˥	-	zuːŋ˦˥	-	z̥un˩	tlu
14	38	tree	tʰiŋ˦˥	tʰiŋ˦	tʰiŋ˨	tʰiŋ˨	siŋ˩	tʰiŋ˦˥	tʰiŋ˦	tʰiŋ˦	tʰiŋ
15	41	thorn	l̥iːŋ˨	l̥in˧	l̥iŋ˨	kʰiŋ˦˥	l̥iŋ˩	l̥iŋ˩	l̥iŋ˧	l̥iŋ˦˥	l̥iŋ
16	42	root	zuŋ˧	ɻam˩	ɻam˨	pʰa˦˥	-	pʲaː˦	taŋ˦	j̊uŋ˩	rɨ˨
17	43	leaf	n̥a?˦	n̥a˨	n̥a˨	n̥a˩	n̥a?˨	n̥a˨	-	n̥oː˨	n̥a˩
18	46	seed	tsiː˩	muː˨	tsiː˦	mu˩	-	ui˦	muː˦˥	uiː˦˥	m̥o
19	48	bamboo	rua˦	rua˧	rua˦	ro˦	roː˩	ʈoː˩	wuː˦˥	joː˦˥	rʉ˨
20	76	monkey	zoːŋ˦	zoŋ˧	zo˨	zau̯˦	joːŋ˩	joːŋ˩	-	joːŋ˦˥	zoː
21	81	dog	ui˦˥	ui˩	ui˨	uːi˨	ui˩	ui˨	ui˦˥	ʔui˩	ɯ˨
22	83	bite	se˦	ɡo˩	kio˩	kei˩	kʉt˨	suːi˨	kei?˦	so˦	sie
23	89	horn	kiː˩	kiː˨	kiː˦	ki˩	kiː˩	kiː˦	ki˦˥	tsiː˦˥	kɨ˨
Sr.No	**Ref.No.**	**Gloss**	**Mizo**	**Khualsim**	**Senthang**	**Matu**	**Kaang**	**Dai**	**Khumi**	**Asho**	**Lau**
24	90	tail	mei˦˥	mei˩	mai˨	mai˩	mei˩	mei˦˥	mai˦˥	mei˩	m̥y
25	93	bird	va˩	vaː˦	vaː˦	va˨	vaː˩	kʰaː˧	va˩	jo˩	va˨
26	95	wing	tʰlaː˩	tʰlaː˦	tʰa˩	tʰe˦˥	pʰraː˦˥	ɤaː˨	l̥iː˧	pʰiaː˦˥	tʰla
27	96	feather	m̥ul˦˥	m̥ul˩	m̥ui˨	mun˩	mʉi˩	muː˦˥	mui˦˥	mo˩	m̥i˨
28	97	fly	tʰloːk˩	soi˧	zuaŋ˦	doi˦	joŋ˩	joːŋ˧	taŋ˦˥	pa˨	zu˦
29	98	egg	tui˦	tiː˦˥	tiː˦	dui˧	tui˩	tui˦	tui˧	tuei˦˥	tɨ˨
30	101	fish	ŋaː˩	ŋaː˨	ŋaː˨	ŋaː˨	ŋaː˧	ŋaː˧	ŋaː˦˥	ŋoː˩	ŋa˨
31	110	louse head	ɻik˦	ɻik˨	ɻi˨	kʰa˦	ɻik˨	sʰeŋ˩	hik˧	hai?˦	ɻɨ˦
32	119	head	luː˨	luː˦˥	luː˦	luː˦	lu˦	lu˦	luː˧	lɨː˦˥	la˨
33	122	hair	sam˦˥	sam˩	sam˨	sam˩	sam˩	saːm˧	saːn˦˥	sʰo̯ŋ˦	suɔ
34	125	eye	mit˦	mit˨	mi˨	mit˨	mik˨	mik˨	mek˦	mik˦˥	mi
35	127	nose	n̥ar˨	n̥aːr˩	n̥aː˦	n̥oŋ˦˥	n̥a˦	n̥a˨	na˨	na˦	n̥a˨
36	129	ear	beŋ˨	naː˧	n̥aː˦	n̥aː˦	n̥a˦	ŋ̊ɦaː˩	n̥aː˦˥	na˦	na˨
37	130	mouth	kaː˨	kaː˧	kaː˦	-	-	m̥pʲoŋ˩	-	kʰoː˦˥	ka˦
38	131	tongue	lei˨	leːi˧	lai˨	lai˨	lei˩	lei˩	lai˦˥	lei˦˥	ly˦
39	133	tooth	haː˨	haː˧	haː˦	haː˨	fa˩	haː˩	haː˦˥	hoː˦˥	ha˨
40	135	chin	kʰa˦	kʰa˨	kʰaː˨	kʰa˨	kʰa˨	kʰaŋ˨	-	kʰoː˦˥	kʰa
41	139	belly	pum˩	pun˩	von˦	von˦˥	von˩	kʰuan˦	jok˦˥	puɨ˨	po˨
42	141	heart	luŋ˨	tʰin˩	loŋ˦	luŋ˦˥	luŋ˩	loŋ˩	loŋ˦˥	luŋ˦˥	loŋ
43	143	liver	tʰin˦	tʃuap˨	tʰin˦	tʰin˦˥	sin˧	tʰin˨	tʰin˦	tʰe̯ŋ˧	tʰɨ˨
44	145	hand	kut˦	kut˨	kui˨	kut˩	kut˨	kut˨	-	koʔ˨	kɯ
45	150	finger nail	tin˦˥	tin˩	tin˦	tin˦˥	tin˩	din˦	sin˦˥	deŋ̊˦	tiŋ˨
46	152	leg	keː˩	keː˩	kei˦	kʰok˩	kʰoː˦˥	kʰoː˨	kʰoː˧	-	pʰy
47	154	knee	kʰuːk˩	kʰuːk˨	kʰum˩	kʰu˦	kʰuːk˨	kʰuːk˦˥	kʰu˧	kʰu˨	kʰu
48	159	bone	ruʔ˦	ru˨	ruː˨	ɻu˩	ruʔ˨	ju˨	hu˦	j̊oː˦˥	rɯ
49	161	flesh	tiː˩	saː˨	ti˨	moi˩	-	saː˧	mui˨	sʰoː˩	sa˨
50	163	skin	vun˦˥	pʰoː˨	vun˨	vɯn˩	vʉn˩	wun˨	ŋan˦	-	vaŋ
51	171	person	mi˦	mi˦	ma˦	mi˦	kʰraŋ˩	kʰiaːŋ˩	kʰu˦	kʰlauŋ˨	tso

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52	172	father	pa:˥˧	pa:˧	pa:˧˥	pa:˥˧	kʰraŋ˥˧	pa:˩˧	pa˧	pa:˥	pa˥
53	173	mother	nu:˥˧	nu:˧	nu:˧˥	nu:˥˧	pa:i˧	nu:˩˧	nu:˧	ʔu:˥	no
54	182	name	miŋ˥	min˩˧	miŋ˧	min˧	no:i˩˥	miŋ˥˩	m̥in˩˥	miŋ˧	mi
55	184	road/path	-	lam˧˩	lam˥	lam˧	miŋ˥˧	lam˧˥	lan˧˥	lo:ŋ˨	luo
Sr.No	**Ref.No.**	**Gloss**	**Mizo**	**Khualsim**	**Senthang**	**Matu**	**Kaang**	**Dai**	**Khumi**	**Asho**	**Lau**
56	192	mat	pʰer˥	pʰak˥	pʰa˥	tʰai˧	lam˧˩	pʰak˧	pʰak˧	pʰaiʔ˥	pʰa
57	212	fire	mei˧˥	mei˥˧	mai˥	m̥ai˥˧	pʰak˥	mei˩˧	m̥ai˧˥	me:i˥˩	my
58	213	ashes	vap˧˥	vut	bua˥˧	ba˩˧	vʉt˥	put˥	bai˧	pʲa:˧	tsu
59	214	smoke	kʰu:˥˧	kʰu:˥	kʰu˧	kʰu˧˥	kʰu:˩˥	kʰu:˧˥	kʰɨ˧˥	kʰu:˨	kʰu
60	224	see	m̥u:˨	m̥u:˧˩	hum˧	m̥u˥˧	m̥o˥	m̥ok˥	n̥ok˥	mu˥	m̥o
61	226	weep	ʈap˧	ʈap˥	tam˨	ka˥˧	krap˥	kap˥	ɣaʔ˧˥	ka˥	tsa
62	227	eat	ei˥	o:˧	o˥o˥	sa˥˧	ai˥˧	ei˧˩	sak˥	ʔe˧	niŋ
63	234	vomit	luak˥˧	lua˨	lua˨	lo˥˧	lok˧˥	lok˩˧	lok˧˥	lo˧	lɨ˧
64	244	laugh	nui˧˥	ni˧	na:i˧	nui˥˧	nʉi˥˧	ʈai˧˥	n̥ui˥	nui˥	n̥y-
65	250	sing	za:i˧˥	sa˧	sat˧	sak˥	ai˧˥	ai˥	sak˧˥	tʃai˥	sa˥˧
66	251	think	ŋaiʔ˨	ruat˥	ruat˥	pak˥˧	ŋaiʔ˥	ŋa:i˥˩	da:n˧˥	-	rie
67	269	die	tʰi:˥	tʰi:˧˥	tʰi:˨	dɯ˥˧	si˨	tʰik˥	dɨ:k˧˥	ɗu˥	tʰɨ˥
68	271	sit	tʰu:˥	to:ʊ˧˥	tʰu:˧	huŋ˥˧	-	sut˥	n̥i:˥	no˧	tu˧
69	272	stand	diŋ˥	di:ŋ˩˧	di:a˧˥	dɯ˥	dʉi˧˥	dɨ:i˩˥	do:˧˥	duŋ˩˧	da˧
70	277	enter	lu:t˥˧	lut˥	kun˨	en˥˧	lut˥	lut˥	ku:n˧˥	-	ŋie
71	281	kick	pet˥	sir˥	sui˥	tʰui˥˧	pet˥	kan˨	tʰui˥	kaŋ˥	tʃʰi
72	284	swim	l̥euʔ˨	l̥au˧	lio˧	le˥˧	jok˥˧	jo˥˧	jao˧˥	ku˧	zu˨
73	288	give	pe:˥	pia˥	pe˥	pɯ˧˥	pe˧	pek˥	pe:k˧˥	pai˥˩	pi˥
74	308	burn	ha:l˧˥	tik˥	˧˥ro˧	soi˧˥	kʰum˥	kʰi˥	l̥eit˧˥	si˥	rie̪
75	312	dance	la:m˥	la:m˩˧	la:m˧	lam˥	lam˥˧	la:m˧˩	lan˧˥	loŋ˧˥	luo
76	313	shoot	ka:p˥˧	sa:i˩˧	va:˥˧	ka˥	ka:p˧˥	ga:p˩˧	ka:˧˥	ko˨	ka˥
77	315	kill	tʰat˨	tʰat˥	tʰai˥	tʰei˥˧	ŋo:n˩˧	n̥im˩˧	duk˧	tu˧	tʰie
78	318	sell	zuar˥	zuar˧˥	zua˥˧	zo˧˥	joi˥˧	jo:i˧˩	jo:˩˥	ji:˧	za˥
79	322	one person	kʰat˨	kʰat˥	kʰe˨	but˧˥	pum˩˥	mat˧	me:˥	pa˧	kʰa
80	323	two	n̥iʔ˨	n̥i˥	n̥i:˨	n̥i˧˥	n̥i˧	n̥i˥	m̥i:˥	ni˥	n̥iŋ
81	334	many	tam˧	tlu:ŋ˧˥	tam˨	pap˥	dam˧˥	da˨	nuei˧˥	nu:˨ɨ	l̥ɯ
82	335	all	vai:˧˥	za˧	za:˧˥	la˧	van˥	ɓaŋ˨	bui˧	buei˧	laŋ
83	339	big	lian˧	n̥ɨm˥	hei˧	len˥˧	ɓau˥	ɗam˧˥	len˧˥	l̥eŋ˥	le˥˧
84	341	long	sei˥	sa:u˥˧	sau˧	so˥˧	sau˧˩	sʰaʔ˩˥	sauk˥	sʰau˨	sy˥
85	344	short height	n̥iam˩˥	niam˥˧	niam˧	n̥am˥˧	nem˨	ne:m˩˧	n̥en˥	neŋ˨	tʃʰ
86	345	thick	tʃʰaʔ˨	sa˥	sa:˧	tʰa˥˧	tʰaʔ˥	sʰa˥	tʰa:˧˥	sʰo˥	tʃʰa
87	351	deep	tʰu:k˥˧	tʰu:k˥	tʰum˧	duŋ˧˥	tʰuk˧˥	tʰuk˧˥	tʰo:k˥	tʰu˧	tʰu
Sr.No	**Ref.No.**	**Gloss**	**Mizo**	**Khualsim**	**Senthang**	**Matu**	**Kaang**	**Dai**	**Khumi**	**Asho**	**Lau**
88	354	full	kʰat˨	kʰat˧	bei˧	koi˥˧	be˧˥	ɓe:˩˥	koi˧˥	lui˧˥	bi˥
89	360	this	hei˥˧	hi˧	hi:˥	hi˧	tsoʔ˨	hin˧	hi˥	ni:˥	hi˧
90	361	that	hi˥	tzu˧	kʰi:˥	ho˥	kʰo˧	sen˧	hu˥	to:˥	hi˥
91	362	black	kʰa˥˧	nak˥	na˨	maŋ˥˧	le˧	le˨	duŋ˧˥	ni˧	vo
92	363	white	val˥	ra:ŋ˧˥	raŋ˥	ŋo˥	bo:k˧	bo:k˩˥	loŋ˧˥	bo˨	ruo
93	364	red	sen˥	san˩˧	sen˥	liŋ˥	sen˨	sen˨	tʰin˧˥	sʰeŋ˥	se˥
94	365	green	r̥iŋ˥	r̥iŋ˩˧	r̥iŋ˧	r̥iŋ˧˥	kriŋ˧	kim˧	iŋ˧˥	siŋ˧	r̥iŋ
95	368	new	tʰar˥	tʰar˩˧	tʰa:˧	tʰa˥	tʰai˥˧	tʰa:i˧˩	tʰa˧˥	tʰa:˥	tʰa
96	376	bitter	kʰa:˧˩	kʰa:˥	kʰa:˧˥	kʰa˥	kʰa˥	kʰak˥	kʰa:˥	kʰo˧	kʰa
97	382	hot	lum˥	sa:˧	lom˧	bet˥	l̥ok˥	l̥ok˥	bi:˩˥	l̥o˥	liŋ

98	386	heavy	rit˧	rit˥	ri˧	ri˩	rɨ˥	rɨː˩	ɣiːt˥	jiː˥	rɨ˧
99	403	where	k^{h}oi˧	k^{h}oː˧	tia˧	tɯŋ˥	ho˥	hai˩	na˧	ni˥	k^{h}a
100	404	who	tu˧	hu˧	hoː˧	mo˧	ha˥	u˥	mi˧	a˧	hoŋ

APPENDIX G

PHONOLOGICAL RULES

The first column from the left is number of phonological sound change rules as it appear in the text and followed by names of rules. Third column to the end from the left is names of languages effected by the respective sound change rules. The symbol (*) shows the generalized rules.

Rule No	**Name of Rules**	**Languages applied to respective the rules**					
Rule 1	Voicing	Tedim					
Rule 2	Voicing	Tedim					

Rule 3	Velarization	Tedim					
Rule 4	Strengthening	Tedim					
Rule 5	Lenition	Tedim				Khumi	
Rule 6	Palatalization					Khumi	Kaang
Rule 7	Deaffrication	Tedim				Khumi	Kaang
Rule 8	Spirantization	Tedim				Khumi	Kaang
Rule 9	Voicing	Tedim					
Rule 10	Deletion	Tedim					
Rule 11	Sporadic		Mizo	Hakha	Mara		
Rule 12	Assimilation		Mizo	Hakha	Mara		
Rule 13	Merging		Mizo	Hakha			
Rule 14	Fronting or Centralization						Kaang
Rule 15	Fronting or Centralization						Kaang
Rule 16	Raising and Centralization						Kaang
Rule 17	Raising				Mara		
Rule 18	*Centralization						Kaang
Rule 19	Diphthongization				Mara		
Rule 20	Lowering					Khumi	
Rule 21	Coalescence				Mara		
Rule 22	Fusion			Hakha	Mara		
Rule 23	Fusion				Mara		
Rule 24	Coalescence					Khumi	Kaang
Rule 25	Monophthongization				Mara		
Rule 26	Coalescence				Mara		
Rule 27	Monophthongization					Khumi	Kaang
Rule 28	Alveolarization					Khumi	
Rule 29	Deletion				Mara		
Rule 30	Deletion				Mara		
Rule 31	Deletion				Mara		
Rule 32	*Deletion				Mara		
Rule 33	Devoicing	Tedim					
Rule 34	Deletion				Mara	Khumi	Kaang
Rule 35	Deletion				Mara	Khumi	
Rule 36	Deletion				Mara	Khumi	
Rule 37	Deletion				Mara		
Rule 38	*Deletion				Mara		
Rule 39	Deletion				Mara	Khumi	Kaang
Rule 40	Spirantization	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
Rule 41	Labiolization	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
Rule 42	Voicing	Tedim					
Rule 43	*Voicing	Tedim					

APPENDIX H

THE STATUS VOICELESS LABIAL FRICATIVE

As discussed in section 4.2.4 the status of voiceless labial fricative /f/ in proto language is questioanable. Table H-1 (repeated from Table 65) is the correspondence set based on the current data. Eventhough there seems to be a consistent sound correspodence across the languges, due to the limited data it is doubtful to posit the voiceless labial fricative as a proto phoneme.

No.	Gloss	Tedim	Mizo	Hakha	Mara	Khumi	Kaang
053	sugarcane	tu˧	fu:˥	fu:˩	su˧	sik˧	tu˧
220	spear	tei˥	fei˥	fei˩	sei˥	-	tei˧

Table H-1. Chin initial voiceless labial fricative /f/

Table H-1 provides addition data which bears on this question. Except the first two words, 26 Mizo words are taken from Bhasakararao (1996:113) and 20 Hakha words are based on the author's knowledge.

Bhaskararao's data is modified by changing /ng/ to /ŋ/, /aw/ to /ɔ/. He does not show tone for Mizo, the Tedim tonal marks correlate with the current data as 1=˥, 2=˧ and 3=˩.

No.	Tedim	Hakha	Mizo	Gloss
1	tuɬ	fuːɬ	fuːʎ	sugarcane
2	teiʎ	feiʎ	feiʎ	spear
3	taː^{1}	fa	fa	son; offspring
4	taʔ^{3}	faʔ	faʔ	feed with the mouth; by hand
5	taŋ^{1}	faŋ	faŋ	seed
6	taŋ^{1}maːi^{2}	-	faŋma	cucumber
7	taːk^{2}	fɔr	far	drip; leak
8	taːk^{2}	faːr	far	pine tree
9	tɔːp^{1}	-	fɔːp	kiss; suck
10	teːŋ^{2}	feŋ	feŋ	apron, wear a lower garment
11	teːp^{1}	feːp	feːp	suck (as sugarcane, fluids)
12	tel^{1}	fiaŋ	fel	understand accurately
13	tuːn^{1}	fuːn	fuːn	wrap up in a parcel or bundle
14	tuːk^{3}	fuːr	fuːr	rainy season
15	tual^{1}	fual	fual	sag, hang low
16	tuk^{3}	fɔk	fuk	erect
17	ciːm^{2}~tiːm^{2}	fiːm	fiːm	clear, transparent
18	ciːm^{2}~tiːm^{2}	fim	fiŋ	wise, clever, artful,
19	ciːl^{1}~tiːl^{1}	-	fir	mean, stingy, thrifty, miserly
20	ta^{1}gaʔ^{3}	-	fahrah	orphan
21	ta^{1} nu^{1}	fa tu	fa tu	one who presides at a feast
22	taŋ^{1}	-	faŋ	alone, only
23	toʔ^{3}	-	fɔːm	along with
24	teŋ^{2}	-	feŋ	much, all
25	tɔm^{2}	fɔm	fɔm	gather fagots
26	tɔːm^{3}	fɔm	fɔm	gather, pick up (stick, firewood)
27	ciak^{2}~tiak^{2}	fiak	fiak	be high pitched, noisy
28	ciam^{3}nui^{2}~tiam^{3}nui^{2}	-	fiam	laugh after joke, humorous

The consistent correspondence of /t/ in Tedim and /f/ in Mizo and Hakha

The Table unambiguously shows that the voiceless labial fricative in Hakha and Mizo consistently corresponds with voiceless coronal stop in Tedim. Based on the consistent sound change between Tadim, Hakha and Mizo, if we assume that the other languages share the consistent sound changes which are shown in Table H-1, it is possible to posit the voiceless labiodental fricative /f/ as the reflex of the voiceless alveolar fricative *s.

Mara and Kaang are conservative as they keep the proto phoneme, whereas the others have gone through phonological changes.

The voiceless alveolar fricative *s becomes the voiceless labiodental fricative in Mizo and Hakha by fronting.

Rule H-A. Fronting (Hakha and Mizo)
*s > f/$___

Khumi goes through an affrication process from *s to /ts/.

Rule H-B. Affrication (Khumi)
*s > ts/$___

Tedim despirantizes *s to /t/.

Rule 55. Despirantization (Tedim)
*s > t/$___

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